University of Alberta

Politics of Technology and Economic Development
Why the Philippines is an Outlier in East Asia

by

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This work is dedicated to my parents,
Ramon and Bonifacia Buctuanon,
for life values of undefinable worth they instilled in us,
their children

Abstract

This study examines politics, economics, culture, and empires and their composite role in the 'puzzling' failure of the Philippines to achieve rapid economic development. Numerous explanations have been forwarded to explain why the Philippines is East Asia's economic outlier. This study seeks to build on this body of scholarship. It attempts to explain why the Philippine government seems to 'lack the political will' to develop the technological capabilities of the country.

This dissertation argues that the long history of colonialism (and neocolonialism) and the dominance of global historic blocs of which the cosmopolitan Filipino ruling élite is a part largely explains the 'lack of political will' problem in the Philippines. Historically, a robust manufacturing industry sector promotes high social mobility and broad-based development. These global historic blocs' trade and financial interests and the technocrats' commitment to economic liberalism imposed free trade policy not only too early in the Philippine development path but entrenched institutions and social forces that effectively and subsequently marginalized the role of technological innovation and production in economic development.

To test the main argument, I posit two hypotheses. First, political will is demonstrated when a nationalist historic bloc (politicians, intellectuals, and capitalists) uses political power to initially establish a production- and service-oriented national economy. Second, political will is shown when an activist government deploys a

development strategy that combines trade with innovation policy to successfully transform a pre-capitalist (or pre-modern) to capitalist (or modern) economy.

The long history of an ostensibly free market economy and the dominance of a global outlook without national roots, dating back to the Spanish colonial Philippines, were and are responsible for widespread poverty in the country. Now trapped in global finance's debt enslavement, the Philippines' only hope lies in the formation of a nationalist historic bloc which could rival the globally-oriented transnational historic bloc. Such a structure emerged during the import-substitution period, but failed to deploy a national system of technology and innovation which could build a dynamic production and service sector.

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LIST OF ACROMYMS AND ABBREVIATIONS

ARCDI	Advanced Research and Competency Development Institute
BGN	Brain Gain Network
BTC	Bankers Trust Company
CHED	Commission on Higher Education
DBCC	Development and Budget Coordination Committee
DBM	Department of Budget and Management
DoF	Department of Finance
DOST	Department of Science and Technology
DTI	Department of Trade and Industry
EIAPI	Electronic Industries Association of the Philippines
EMS	Electronic Manufacturing Services
EO	Executive Order
EP	Export Promotion
ETRI	Electronics and Telecommunications Research institute
FDI	Foreign Direct Investment
FIAS	Foreign Investment Advisory Service
GATT-WTO	General Agreement on Tariffs and Trade-World Trade Organization
GDP	Gross Domestic Product
GERD	Gross Expenditure for Research and Development

HDD	Hard Disk Drive
HSBC	Hong Kong and Shanghai Banking Corporation
IPE	International Political Economy
IT	Information and Technology
IMF	International Monetary Fund
IS	Import-Substitution
JCRR	Joint Commission on Rural Reconstruction
JCS	Joint Chiefs of Staff
KAIS	Korean Advanced Institute of Science
KIET	Korean Institute of Electronics Technology
KIST	Korean Institute of Science and Technology
MITI	Ministry of International Trade and Industry
MOST	Ministry of Science and Technology
MTPDP	Medium-Term Philippine Development Plan
NEC	National Economic Council
NEDA	National Economic and Development Authority
NSCB	National Statistical Coordination Board
NSF	National Science Foundation
NSI	National System of Innovation
ODM	Original Design Manufacturers
OEM	Original Equipment Manufacturers
OFW	Overseas Filipino Workers
OP	Office of the President

PES	Presidential Economic Staff
PES	Philippine Economic Society
PIA	Program Implementation Agency
POEA	Philippine Overseas Employment Administration
PRC	Professional Regulatory Commission
PSCC	Philippine Standard Commodity Classification
R&D	Research and Development
ROC	Republic of China
S&T	Science and Technology
SAL	Structural Adjustment Loan
SEA	Social Economy Association
SEIPI	Semiconductor and Electronics Industries in the Philippines, Inc.
SMEs	Small- and Medium-Sized Enterprises
TFP	Total Factor Productivity
TNC	Transnational Corporation
TRP I	Tariff Reform Program
UNIDO	United Nations Industrial Development Organization
UPSE	University of the Philippines-School of Economics
WB	World Bank
WB-IMF	World Bank- International Monetary Fund

Introduction

> My only desire is to do what is possible, what lies within my grasp, what is most necessary. I have glimpsed a little light and I believe I should show it to my countrymen.
>
> ***José Rizal (1892)***

More than an academic quest, this study is a personal journey in the search for hope in what appears to be a hopeless situation. There is a wave of hopelessness that is sweeping the Philippines. A 2006 poll found that one of every three Filipinos wanted to leave the country because "they see no hope", and there are still no improvements on the horizon.[1] What has gone wrong with a country that most believed in the 1950s displayed high potential for national development?

This study examines politics, economics, culture, empires and their composite role in the 'puzzling' failure of the Philippines to achieve rapid economic development and modernization.[2] Development in the real sense of the word, as the Nobel Prize winning economist Amartya Sen argues, is about freedom to live a fulfilled life, while poverty and poor economic opportunities are among the "major sources of unfreedom".[3] This is not to say that economic freedom is *the* most important of all human freedoms, but, as Sen points out, economic poverty breeds social poverty just as social poverty results in economic poverty.

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[1] Conrado de Quiros, 'Believe it or not', *Philippine Daily Inquirer*, December 20, 2006. http://opinion.inquirer.net/inquireropinion/columns/view_article.php?article_id=39435, Accessed December 5, 2007.

[2] 'Politics' is defined as the exercise of power, and 'power' is the capacity of individuals, groups, and political institutions or forces to realize key decisions. 'Economics' is about how individuals or groups make decisions with limited resources to satisfy needs, wants, and desires. On this account, the term 'political economy' refers to how a nation can obtain prosperity and the power of producing wealth which is more important than wealth itself. 'Culture' refers to ideas, customs and practices that are transmitted socially, not biologically. 'Empire' means the penetration across borders of formally sovereign states to control their actions from within through compliant élites in both public and private spheres. Modernization means that societies have a standard evolutionary pattern, from barbarism to greater levels of development and civilization. It is usually equated with Westernization, the idea that modern development brought rational authority, industrialization, and societies with a complex division of labour.

However, modernization and development had been discredited in the south because they failed to deliver the much-desired good life they promised. On this account postdevelopment[4] scholarship emerged and it counterposed cultures to modernization.[5] Following Sarah Radcliffe and many others, this study takes cultural differences not as an alternative *to* modernization. Rather, they inform the contested relations upon which modern development is built and policy prescriptions are devised.[6] A culturally-informed modern development perspective then (which this study adopts) embraces intertwined images of modernity, development, technology and innovation, and nationalism, constituting a mindset and a strategy to generate the wealth of a nation by producing objects of more value than what is consumed. Moreover, there is now recognition in development studies that a postcolonial lens needs to engage scholarship concerned with the cultural, political and material aftermath of various colonialisms.

The Philippines is a predominantly merchant- and finance-oriented economy that continues to impoverish the majority because this type of economy has the unintended consequence of concentrating wealth only to a few. Amy Chua, a law professor at Yale

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[3] Amartya Sen, *Development as Freedom*. Westminster, MD: Alfred A Knopf, 1999, p. 3.

[4] 'Postdevelopment' is a strand of thought that rejects the idea of development as largely a Western-centric concept that has proved inadequate in meeting the needs of the non-Western world.

[5] See, for example, Arturo Escobar, 'Imagining a postdevelopment era', in Jonathan Crush (ed.) *Power of Development*. London: Routledge, 1995b.

[6] Sarah Radcliffe, 'Development and geography: towards a postcolonial development geography', *Progress in Human Geography* 29 (3), 2005, pp. 291-298; Amity A. Doolittle, 'Powerful persuasions: the language of property and politics in Sabah, Malaysia (North Borneo), 1881-1996', *Modern Asian Studies* 38 (4), 2004, pp. 821-2.

University and author of the bestseller *World on Fire* points out that the "entrepreneurial, economically powerful" but resented "Chinese ethnic minority" (of which her own family is part), comprising "one percent of the population" controls "as much as 60 percent of the private economy" in the Philippines. "Today when foreign investors do business in the Philippines", Chua adds, "they deal almost exclusively with Chinese". She further points out that "apart from a handful of corrupt politicians and a few aristocratic Spanish *mestizo* families, all of the Philippines' billionaires are of Chinese descent. By contrast all menial jobs…are filled by Filipinos."[7] Indeed, this description vividly portrays a remarkable change and sameness after more than four centuries when the first group of Chinese came to settle in the Philippines.

This study has no intention of fuelling resentment against the Chinese in the Philippines. I believe that the disreputable state of the Philippines was and is of its governments' own making – from the Spanish to the American and Filipino political leadership. The challenge facing the Philippines is how to successfully transform a merchant- and finance-based economy into a production- and service-oriented one, both in the agriculture and industry sectors. Historically, a robust and closely-linked agriculture and manufacturing sector (the latter, more recently, is difficult to distinguish from service industry) promotes high social mobility and broad-based development.

Many studies have already been conducted to untangle the Philippine development puzzle. This research project seeks to complement existing knowledge. In this dissertation, I use international political economy and the neo-Schumpeterian NSI (national system of innovation) approaches to explore power and the role of a coalition of social forces toward a successful industrial transformation. More particularly, I propose an actor-oriented conception of NSI as an historic bloc, a malleable and loose coalition of technological, economic, political and cultural forces that shape the development and effective use of productive knowledge in an economy in various times and places.[8] More than ever before, technology and innovation are necessary and legitimate instruments to secure dynamic production and service sectors to generate a nation's wealth. However, the development and widespread adoption of technology and innovation in an economy to ensure rapid growth and social transformation are limited by the political and cultural elements prevalent in a society.

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[7] Amy Chua, *World on Fire: How Exporting Free Market Democracy Breeds Ethnic Hatred and Global Instability*. Westminster, MD: Knopf Publishing Group, 2004, pp. 19-20.

Many studies reviewed allude to the 'lack of political will' on the part of the Philippine government to harness science, technology, and innovation in economic development. My research question, therefore, is: Why does the Philippine government seem to lack that 'political will', and how did it come into being? I argue that the marginalization of a nationalist historic bloc and the enduring dominance of **global** historic blocs of which the Filipino élite has become part are at the root of the 'lack of political will' problem in the Philippines, i.e. the failure to deploy technology and innovation to build robust agriculture, manufacturing and service industry sectors. These global historic blocs' trade and financial interests and the technocrats' commitment to economic liberalism imposed free trade policy not only too early in the Philippine development path, but also entrenched institutions and social forces that distort, limit and marginalize the build-up of the productive and technological capacity of the nation.

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[8] This is a concept more or less similar to Edquist's and Edqvist's (1979) notion of "social carriers of techniques", which could be an institution (such as a company or an agricultural cooperative) or individual persons (such as an individual peasant). The notion of historic bloc in this study, however, refers to ruling elites (political, economic, and cultural) because of the privilege accorded to the choices of development policy structures or strategies. See Charles Edquist and Olle Edqvist, 'Social carriers of techniques for development', *Journal of Peace Research* XVI (4), 1979, pp313-331.

The long history of free market economy and the dominance of a global outlook without national roots, dating back to Spanish Philippines were and are responsible for widespread poverty in the country. Trapped in global finance's debt enslavement, the Philippines' only hope lies in the formation of a nationalist historic bloc which could rival the globally-oriented transnational historic bloc. Such a structure emerged during the import-substitution (IS) period, but failed to deploy the neo-Schumpeterians' national system of technology and innovation. Consequently, the transformation from merchant- and finance-based economy into manufacturing- and service-based economy did not materialize.

Many scholars argue that the current globalization is responsible for the integration and reconfiguration of domestic class structures and political relationships, forming global political, intellectual, and economic historic blocs. In the case of the Philippines, however, this occurred many centuries earlier, and effectively made it difficult for a solid nationalist historic bloc to emerge in post-colonial Philippines to rival the global bloc. As a result, the establishment of a NSI, *key* in a dynamic wealth generation strategy of a nation, was obstructed. This is the missing piece in understanding the Philippine development puzzle.

Analyzing the puzzle

In attempting to make sense of the economic development puzzle, I propose two major research goals. The first objective is to formulate an appropriate analytical framework to help make sense of the underdeveloped economic situation in the Philippines. The second goal is to test this framework to analyze the challenging experience of the Philippines, and I will use the lessons learned from the historical experiences of the UK, US, Japan, Taiwan and South Korea – the laboratory accessible to social scientists – to illuminate the Philippine situation.

This approach developed in Chapter 1 combines the neo-Schumpeterians' view of NSI and Gramscian or neo-Gramscian historical materialist approaches. It takes technology as endogenous to economic growth, and the congruity of social, political, cultural, and economic factors as crucial to creating a dynamic innovation and production system. It emphasizes a wider scope and complementarity of networks of institutions and social forces for local or national technological- and innovative-capability building. This is enriched by Gramscian and neo-Gramscian IPE (international political economy) approaches' emphasis on global structures, which provide the context within which states formulate a national development strategy, and on aspects of power exerted at national and global levels. In this study, a **national development strategy** is understood as instruments formulated and implemented by national actors or agents of a social formation for wealth accumulation based on their cognitive appreciation of the global structure.

The premise is that overarching global structures unify capitalist accumulation. However, national outcomes are varied because national ruling élites differ in their understanding, interpretation, and solutions to global challenges. Moreover, differences in political actions are influenced by the specific configuration of and power relations among social actors, contingent on a nation's history and culture. The analytical framework provides a holistic, systemic, and institutional analysis: **holistic**, because it recognizes the importance of understanding the synergistic interaction of the key component institutional and social actors and their combined influence on outcomes; **systemic**, because it takes the global political economic architecture as the broader structure that unifies capitalist accumulation activities; and **institutional** because while it sees the important role of unifying structures, it also recognizes that the local or national society's system of innovation and production is largely shaped by the evolution of the institutions that create a nation-state's structure and pattern of linkages to the wider society.

Paul Hutchcroft, an eminent political economist and expert on the Philippines, sees the need to understand the problem of economic underdevelopment in the country by looking at the linkage between the national and international spheres. He states that:

> …a fuller understanding … requires clear analysis of why external actors remain *so powerful in Philippine policy formulation*, when other economies in the region that used to be similarly "dependent" have since managed to carve out stronger roles for themselves. For a start it is worth inquiring as to how clientele relations with the US seem to have insulated Philippine elites from any real sense of intrastate competition — competition that has often been the historic starting point for serious state-building projects. For most of this century the oligarchy's major external concern has been how to ensure continued US sponsorship for their domestic hegemony. The plunder of the Philippine state is not self-sustaining; ultimately it depends on the international dole. As US strategic perceptions change, and the oligarchy finds it increasingly difficult to use the military bases to extract critical support from Washington patrons, one might

> begin to see changes as well in the nature of the Philippine state (emphasis added).[9]

Hutchcroft suggests that a specific political economic structure unique to the Philippines resulting from the interaction between national and global social actors may have caused the Philippine economic and development malaise.

Main argument and key assumptions

One of the recurring themes in the literature explaining the failure of rapid industrialization is the 'lack of political will' on the part of the Philippine government to harness science, technology, and innovation in agricultural and industrial development. The 'political will' to build a dynamic industrial society is a direct consequence of the actions and decisions of political leaders. In reality, however, 'political will' emanates from the other component elements of an historic bloc, that is, the intellectual and material forces, both in local and global levels.

Yet, it is economic ideas or theories which inform national development strategy that wield tremendous power. Ideas embraced by a loose cluster of dominant technocrats, political leaders, intellectuals, and business people, when widely promoted, become a moral dictum – a 'common sense' or unquestioned belief held by the general population. Consequently, alternative ideas and strategies are marginalized, thus change is a rare commodity in backward economies. Economic theories which, time and again, have created wealth among nations have made the role of production, industrialization and technological change central in the development strategy. The experiences of the UK,

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[9] Paul D. Hutchcroft, 'Oligarchs and cronies in the Philippine state: The politics of patrimonial plunder', *World Politics* 43 (3), 1991, p. 450.

US, Western Europe, Japan, South Korea and Taiwan are examples, as shown in this study.

I posit that rapid economic development of the Philippines was and still is primarily obstructed by cosmopolitan historic blocs. Unless a nationalist élite group gains power and prioritizes innovative agricultural and industrial production sectors, and makes trade and financial businesses a temporary support system until the task is complete, a rapid economic development cannot proceed. These Filipino élites identify more with global elites than with their own country. They privileged a development strategy based on international free trade or comparative advantage theory and laissez faire governance, inappropriate for a developing economy but which could eventually be a necessary strategy once a certain level of development has been reached. Moreover, a development strategy based on abstract models has disappointed and will continue to disappoint us in providing a realistic analysis of the social, political, economic, and intellectual structures that prevent the creation of NSI and the conditions favourable to Filipino industrial capitalism.

To inquire in a comparative perspective whether the Philippines has the required 'political will' to develop its technological and innovative capability, essential in a structural shift from mercantile- to a robust production-oriented economy, I put forward two main hypotheses elaborated in Chapter 1. The first hypothesis is that political will is demonstrated when a nationalist historic bloc (a loose cluster of politicians, bureaucrats, intellectuals, and capitalists) uses political power to establish initially a production- and service-oriented national economy. A material base characterized by reinforcing dynamics of highly innovative agriculture, industry and service sectors is a critical requisite for rapid economic development. This transformation is obstructed in countries with colonial experiences because of social structures and forces created by colonialism. However, colonial impact may vary depending on the colonial powers' policy. For instance, political, economic and ideological foundations toward a modern political economy were not established during the Spanish and American colonial eras in the Philippines. By contrast, Japanese colonial policies in Taiwan and South Korea provided a foundation that would launch rapid economic development during the postwar period.

Second, political will is shown when an activist government deploys a development strategy that combines trade with innovation policy to successfully transform a pre-capitalist (or pre-modern) to a capitalist (or modern) economy. Nationalist historic blocs largely consider technological and industrial development as processes that are never natural but are created. They aim to build a coherent system that generates technological and innovative knowledge and uses them in the economy, and deploy a belief-system which enables and transforms the actors' roles. In this sense, I use the NSI framework in an instrumental way, meaning that an innovation system is something that is produced through human effort rather the 'invisible hand' of the market. Hence, it is important to understand the power dynamic in social structures and prevailing economic thought because, more often than not, the ideas of the dominant forces define the policy and performance realities.

Why the Philippines?

An economic outlier in the dynamic Southeast Asian region, the Philippines presents an ideal opportunity to examine cases of failure in economic and technological catch-up. The country received an early impetus for industrialization late in the 18th century, although it was only after the Second World War that an aggressive industrialization strategy was pursued. The Philippines is an interesting case given that both state-led (import-substitution) and free market (export-led) development models have failed to spur rapid economic growth and address the pervasive poverty in the country.

I have used the historical experiences of the UK, US, Japan, South Korea and Taiwan as 'shadow cases' where activist governments intervened in the economies at some point in their development path to ensure that national productive and innovative capacity was established and the structure of the economy changed. The social relations that generated such a capacity and the agricultural and industrial capitalist development that occurred in these countries are seen as useful to illuminate the challenging situation in the Philippines.

A comparison of the Philippines' social relations with those of Malaysia or Thailand, for example, is less helpful in the sense that these countries, if any, have systems of innovation which are still evolving. South Korean and Taiwanese conditions provide an understanding of social relations for economies that have colonial experiences like the Philippines but yet successfully employed development strategies revolving around the idea of 'economic catch-up' at different times and spaces.

Methodology

In addressing the hypotheses discussed earlier, perspectives on the nature of reality and of knowing and knowledge are briefly discussed. Epistemological assumptions are implicit in the specific methods employed. The entire approach of the research rejects methodological individualism where actors in an economy are usually taken as unitary.[10] For instance, the modern state as an actor is held as capable of being autonomous not just relatively from other social forces, but, also, it is internally dependent upon other elements of the historical structure. Thus, its actions are shaped and limited by the social context or patterns of relations with other elements of the larger society.

This study uses an historical method of analysis for a deeper treatment of the case and to allow the underlying mechanisms to be understood.[11] The method also allows for a new causal explanation which contributes to new knowledge and helps in the formulation of theories.[12] An historical structure is an ideal frame of reference or a simplification of a complex social reality that provides intellectual coherence of a series of discontinuous cases or events, something we could almost call historical laws[13]; however, the specific content of that frame varies among societies.

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[10] Craig Murphy and Roger Tooze, 'Getting beyond the "common sense" of the IPE orthodoxy', in Craig Murphy and Roger Tooze (eds.) *The New International Political Economy*. Boulder: Lynne Rienner Publishers, 1991, pp. 9-31.

[11] Russell Keat and John Urry, *Social Theory as Science*. London; Boston; Melbourne and Henley: Routledge and Kegan Paul, 1982, pp. 4-65.

[12] Mattei Dogan and Dominique Pelassy, *How to Compare Nations: Strategies in Comparative Politics*, second edition. Chatham, New Jersey: Chatham House Publishers, Inc., 1990, pp. 11-159.

[13] Tom Mackie and David Marsh, 'The comparative method', in David Marsh and Gerry Stoker (eds.), *Theory and Methods in Political Science*. Basingstoke, Hampshire: Macmillan, 1995, pp. 173-188; Charles Tilly, *Big Structures, Large Processes, Huge Comparisons*. New York: Russell Sage Foundation, 1984, pp. 1-86.

Historical structure as a concept or frame of reference takes into account the recurrence of a phenomenon identified across time and space. This provides intellectual coherence to a series of unique situations and periods, thus making comparison possible. But because frames of reference are abstractions or simplifications of complex social processes, distorting the unique and the concrete, their limitations are recognized. However, when used in a "cluster of cases" they allow for "mild generalizations" or the formulation of "middle range theory".[14] They enable an understanding of elements of continuity that link the present to the past, and of elements of change that mark the present as different from the past.

Historical structure as an analytical framework indicates to us that, depending on specific space and time, political decisions are largely influenced by intellectual élites who serve as influential government bureaucrats. At other times, the configuration of power is tilted towards an alliance of political and material forces. Of course, the cosmopolitan and nationalist segments of these forces compete for power.

In the present study, a cosmopolitan historic bloc which embraces the liberal economic belief-system is a phenomenon that exhibited a recurring pattern, dominated public policy, and entrenched social and political arrangements and processes within Philippine society. Such a powerful historical structure favoured mercantile and agrarian-based export economic activities rather than industrial production. Its dominance has kept national industrial capitalists at bay and significantly contributed to the lack of political will on the part of the Philippine government to build up the country's technological capabilities.[15]

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[14] Roy C. Macridis and Bernard E. Brown, 'Comparative analysis: method and concepts', in Roy C. Macridis and Bernard E. Brown (eds.), *Comparative Politics: Notes and Readings*, 8th edition. Pacific Grove: Brooks/Cole, 1996, pp. 1-15.

The study, however, goes beyond exploring the role of liberal or neoliberal ideology and aspects beyond the realm of trade are explored. The neo-Schumpeterians' thinking on the role of technology and innovation as drivers of industrial and economic growth has a strong influence on the present inquiry. The analysis mainly focuses on the Spanish and American colonial eras, and the post-World War II period. These historical periods broadly represent political developments in the Philippines. They also, more or less, coincide with the historical succession of periods of capitalist expansion and contraction closely associated with technological and industrial change: from the age of cotton (1780s-1840s), coal and iron (1840s-1890s), steel (1890s-1940s), oil and plastics (1940s-1990s), to the present microelectronics (1990s-?).[16] If Carlota Perez and other neo-Schumpeterians are to be believed, these paradigmatic periods should have opened windows of opportunity for catch-up for the Philippines. But the country has simply lost them, and will continue to do so unless a radical shift in thinking occurs among development planners.

The analysis is based on a variety of materials including primary and secondary sources where available, but, generally, I do not uncover new details, especially in the historical discussion; rather I interpret what is already known to specialists in such a way as to shed light on what has been largely argued as 'the lack of political will' on the part of the Philippine government to establish a NSI. Industry reports, country studies, mission reports, government policy documents, news reports, and primary data, such as time series from the national statistics office, and interviews with government officials, industry leaders, and corporate executives are also used.[17]

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[15] Consistent with the neo-Schumpeterian tradition, 'technological capability' is here defined as the ability to scan for knowledge and technologies in the market as well as best practices, assess their value and choose or acquire those that are suitable for a country's development, use, adapt and improve on it and finally develop technologies. The elements of technological capability in the industrial sector include production engineering, research and development, marketing and management.

[16] Chris Freeman and Luc Soete, *The Economics of Industrial Innovation*, Third Edition. Cambridge, MA: MIT Press, 1997, p. 19.

It is impossible to measure technological change and innovation directly so that input (e.g. human resources, expenditures) and output (e.g. publications, patents) indicators are used as proxies. The general categories of indicators are S&T (science and technology), innovation, and R&D (research and development) activities.[18] In this study, however, the available data are primarily on R&D and S&T activities. Due to lack of readily available data on innovation activities in the Philippines, this activity was not measured.

It is recognized that on their own these indicators are only a summary quantitative reflection of very complex patterns of activities and institutions. But their usefulness is enhanced because they are analyzed in relation to a wider qualitative inquiry, such as the political, technological, economic and cultural structures of the countries under investigation. For example, GERD (gross expenditure for research and development) is measured in relation to a country's GDP (gross domestic product) to indicate the propensity to use available national resources for technology capability build-up. To a certain degree, GERD as a proportion of GDP indicates the country's 'political will' and can be used as a variable for comparison.

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[17] Data collection was undertaken in 2005 through an IDRC (International Development Research Centre) Doctoral Research Award.

[18] The available data, however, are primarily on R&D activities. 'Science and technology activities' are "all systematic activities which are closely concerned with the generation, advancement, dissemination, and application of scientific and technical knowledge in all fields of science and technology, that is, the natural sciences, engineering and technology, the medical and agricultural sciences, as well as the social sciences and humanities." On the other hand, 'innovation activities' are all scientific, technological, organizational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations. Some innovation activities are themselves innovative, others are not novel activities but are necessary for the implementation of innovations." 'R&D activities' "comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications." See OECD, *Frascati Manual: The Measurement of Scientific and Technological Activities: Proposed Standard Practice for Surveys of Research and Experimental Development*, 6th edition. Paris, France: Organization for Economic Co-operation and Development, 2002; OECD, *OECD Proposed Guidelines for Collecting and Interpreting Technological Innovation Data – Oslo Manual*, 3rd edition. Paris, France: Organization for Economic Co-operation and Development, Statistical Office of the European Communities, 1997.

Organization

Chapter 1 attempts to conceptualize the politics of technology and economic development and lays the theoretical foundation for this study. To unpack the 'lack of political will' problem, I combine a historical materialist approach in international political economy and development studies with the NSI approach in economics and science policy studies. The NSI approach is able to show that there is lack of political will but it is unable to explain why. Here the Gramscian concepts of historic bloc and hegemony and their neo-Gramscian appropriation in the international realm are useful.

Moreover, I draw the links between the concepts of nationalism, scientism (where science is loosely defined as activities, procedures and attitudes such as an abiding respect for observed facts shaped by day-to-day human concerns rather than a rigorously systematized knowledge), and developmentalism. These elements are crucial in explaining political choices to build (or not to build) an innovative production- and service-based national economy. The role of nationalist politico-ethical forces is central in the establishment of a NSI inasmuch as the political apparatus is responsible for integrating various forces essential in an industrial mode of production. Developmentalism, a worldview that is production- and innovation-oriented, is key in modernization and development and that economic liberalism is an inevitable phase once a strong national productive base is established. This is the logical order that, once reversed, results in the continued impoverishment of societies.

Chapter 2 contextualizes the research problem and the general direction of the dissertation. It seeks to make sense of the Philippine development puzzle by understanding the broad contours of scholarship on Philippine political economy and development, and NSI. It challenges development policymaking in the country to move beyond foreign trade and investment given the lack of technological capability and productivity that lie behind the profound contrasts in performance between the Philippines and the developed Asian countries.

Chapter 3 traces the origin and establishment of a trade-based economy and the dominance of mercantile and financial interest in the Philippines during the Spanish period from 1565 to 1898. From this material base emerged the problematic and fragmented *ilustrado* nationalism. Having internalized Spanish culture and practices, the cosmopolitan *ilustrados*' national interest was compromised from the beginning. As a result, they left a legacy of 'Filipino-ness' characterized by an ambiguous nationalism devoid of a truly nationalist sentiment. The contradictions born of the Filipino élites' campaign for 'assimilation' and intra-group differences were manifested in "pro-imperial-cum-anticolonial politics…transposed into the politics of the Philippine ruling class".[19]

The nationalist *ilustrado* and the *Katipunan* [Society] of Andrés Bonifacio successfully established, albeit short-lived, a nationalist hegemony. It presented a rival structure to the global structure. However, American imperialist goals in the Asia-Pacific produced a devastating twist in the history of the Philippines because American intervention became an external force that interfered in the internal struggle between the nationalist and the cosmopolitan *ilustrados*.

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[19] Filomeno V. Aguilar, 'Tracing origins: *ilustrado* nationalism and the racial science of migration waves', *The Journal of Asian Studies* 64 (3), 2005, pp. 630-31.

Chapter 4 presents the continuity and changes of *ilustrado* nationalism under the American regime, from 1901 to 1946. The US "benevolent assimilation" and "democratic tutelage" co-opted the Filipino *ilustrados* and made the latter part of a colonial rule characterized by what Ruby Paredes calls a "patron-client relationship."[20] Such alliance destroyed the budding nationalist hegemony.

The introduction of an electoral democratic system from the municipal to provincial and national levels, to a certain degree, established a decentralized nation-state. However, benevolent assimilation did not create a developmental bureaucracy. Consequently, the same merchant economy was linked to an industrial global economy with a predatory state and the continued hegemony of the global historic bloc. As part of a global coalition of ruling élites whose material interest was trade-based, the cosmopolitan *ilustrados'* ideological commitment was to economic liberalism, which was not conducive to the growth of local industry. The colonial conditions in the Philippines contrasted with those in Taiwan, and are compared.

Chapter 5 posits that the IS strategy in the 1950s failed because the strategy was still largely based on a trade-driven policy. Filipino nationalists with industrial interests ruled the country and were to be credited for starting an industrialization project of a politically independent state. However, this project was limited because of the lack of understanding of the role of technology and innovation in production by economist-planners. The reason is that the nationalist technocrats who held critical positions in government, setting policy directions and programs, embarked on a production strategy which relied on trade policy alone, but which was never technology- and innovation-driven. Consequently, a coherent innovation and production environment and a culture of science and technology was never created during the IS period. The situation shows the distortions in colonial (and neo-colonial) education system of the Philippines.

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[20] Ruby Paredes, 'The origins of national politics: Taft and the partido federal', in Ruby Paredes (ed.) *Philippine Colonial Democracy*, Monograph Series 32. New Haven, CT: Yale University Southeast Asian Studies, 1998.

The same has happened in the EP (export-promotion) period (1970s-present). To illustrate, Chapter 6 examines the Philippine electronics industry. Although it is considered a high-tech industry, it is generally based on trade rather than manufacturing. With very few exceptions, the electronics industry is mainly an import-export business with some value-added derived from assembly operations by local Filipino companies. The massive and aggressive industrial research activity at the firm level which characterizes the electronic industries of South Korea, for instance, is absent in the Philippines.

Chapter 7 ties in the dominance of liberalism (or neoliberalism) and *ilustrado* cosmopolitanism in the Philippines to explain the failure to industrialize in both IS and EP periods. The grinding poverty in the Philippines has been largely 'created' by the technocrats whose ideological commitment to the free market blinded them from seeing that trade policies are not enough to build a globally competitive industry. It is not the resource endowments or supply of cheap labor and raw materials that will make the 'Filipino dream' of a progressive Philippines a reality. It is only through the development of 'Made in the Philippines' technologies and innovations that this will come about. For this to happen, however, an effective socialization project for both the political leadership and the Filipino people is imperative.

The Filipino leaders must view and interpret global political economic realities differently. It is through the rational application of technological and innovative knowledge by profit-oriented entrepreneurs in the agriculture, manufacturing and service industries that rapid economic development is encouraged. The development and nurturing of a critical mass of these kinds of forces are dependent upon the establishment of networks of learning and innovation between and among producers and users, university researchers and professors, students, entrepreneurs, farmers, and industry workers. This, however, necessitates an activist government that provides the vision and actively creates an environment that would make supporting financial, technological, economic, and educational institutions work tangentially to ensure that a functional system of innovation and production is in place.

Finally, the Conclusion (Chapter 8) summarizes both the overall arguments in the thesis and the lessons learned. My prognosis is that making a dent on poverty and promoting an equitable economic development in the Philippines can be achieved by establishing NSI within the context of an agriculture-based industrial development. This is the most logical path for the Philippines given its fiscal limitation and the relatively low-cost barrier of entry in agriculture-based industry. Besides improving the living conditions of poor Filipinos, this would create a robust domestic market. Putting scarce government resources into electronics and information communication technology R&D will just reinforce the marginalization of rural Philippines. A critical mass of innovative

SMEs (small- and medium-sized enterprises) can be developed in this sector, but this goal must be worked out at the local government level.

It will require nationalist and technologically astute technocrats and intellectuals to socialize businessmen and political leaders to the tremendous importance of technology and innovation in economic development. These forces will be crucial for conceiving and advancing collective images and meanings as a common ground for social discourse with regard, for example, to the development, financing, regulation, protection, and utilization of technologies. Such persuasion must penetrate the broadest sectors of Philippine society to be effective in making industrialization through technology and innovation a national issue.

This study's contribution to the existing body of scholarship is the articulation of the form and nature of the Philippine historic bloc and the fabric of relationships among colonialism, nationalism, scientism, and capitalism in the country's failed bid for modernization. The study is interdisciplinary, seeking to draw from various disciplines such as economic history, international political economy, development, and science and technology studies to illuminate the complex situation in the Philippines.

In the story that I am about to tell, I have chosen not to dwell on the evils of the industrialization of societies. Studies have been conducted in this regard in the Philippines.[21] My goal is to understand why industrial capitalists in the Philippines, unlike those in Taiwan and South Korea, were not able to create conditions favourable to themselves. The study does not analyze specific policies. Rather, it is focused on the broad analysis of the continuity and changes, over a period of four or five centuries, in the composition of the ruling historic blocs or political, economic, and intellectual élites, their decisions and policy or development strategy choices.

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[21] Studies related to this issue, especially in the Philippine electronics industry have been undertaken, for example, by Stephen Mckay, 'Securing commitment in an insecure world: workers in multinational hi-tech subsidiaries', *Economic and Industrial Democracy*, 25 (3), 2004, pp. 375-410; Rosalinda Pineda-Ofreneo, 'Issues in the Philippine electronics industry: a global perspective', *Economic and Industrial Democracy*, 6, 1985, pp. 185-207.

More than anything else, however, this study is exploratory in nature. It barely scrapes the surface of the work needed to understand the power of global traders and financiers in the Philippines and its impact on NSI. Nonetheless, this study's contribution is in focusing the spotlight to a new possible research agenda in Philippine studies. There is a need to examine the specific workings of the enduring economic, political, and ideological structures which have impeded the development of NSI in the country.

Chapter 1 Conceptualizing the politics of technology and development

> The power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas…The ideas of *economists* and *political philosophers*, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else.
>
> ***John Maynard Keynes (1936)***
>
> When afterwards I visited the United States, I cast all books aside – they would only have tended to mislead me. The best work on political economy which one can read in that modern land is actual life ...That book of actual life, I have earnestly and diligently studied, and compared with the results of my previous studies, experience, and reflections... And the result has been (as I hope) the propounding of a system which, however, effective it may as yet appear is not founded on bottomless cosmopolitanism, but on the nature of things, on the lessons of history, and on the requirements of the nations. It offers the means of placing theory in accord with practice and makes political economy comprehensible by every educated mind, by which previously, owing to its scholastic bombast, its contradictions, and its utterly false terminology, the sound sense of mankind had been bewildered.
>
> ***Friedrich List (1885)***

This chapter attempts to conceptualize the politics of technology and economic development. I draw from political economy and NSI approaches and propose that NSI is an historical structure. To this end, I suggest that global capitalist accumulation processes are always refracted through the prism of social relations prevailing within nation-states, hence the varied responses or abilities of nation-states to establish NSI.

Sub-section 1.1 discusses key concepts in NSI, such as technology, innovation and endogenous economic growth. The conception of technological innovation as a social process is discussed, especially the emphasis on interdependency and interactive learning and its relevance in building capabilities in production and service sectors.

Sub-section 1.2 discusses the NSI approach as propounded by Chris Freeman as well as Bengt-Åke Lundvall, and the historical materialist approaches advanced by Antonio Gramsci and Robert Cox. My goal is to synthesize the two approaches to make sense of the 'political will' (or lack thereof) problem in societies. The goal is to locate my own proposition that NSI is an historical structure, emphasizing the role of a malleable coalition of political, technological, and cultural forces or human agents in the economic transformation equation. Here NSI is deployed in an instrumental way, that is, it is something that is not given, but is created by human effort.

Sub-section 1.3 elaborates on the necessity to establish a production- and service-oriented national economy before a modern national development pattern and a globalization that benefits all can be achieved. While the production sector has traditionally been accorded the source of "natural productive powers of the nation", the information revolution or the so-called knowledge-based economy, in recent decades, revolutionizes the service economy. I draw connections between nationalism, scientism, and developmentalism as they relate to the crucial role of the modern state. While Friedrich List's developmentalism is usually regarded as political economic thought opposed to Adam Smith's and David Ricardo's economic liberalism, the real issue facing developing countries is the timing and logical order in which these economic visions should influence development strategies. If meaningful development in backward economies or what Erik Reinert calls "good globalization" is desired, the logical order should be developmentalism and economic liberalism. When the order is reversed as is prevalent in postcolonial societies, underdevelopment and poverty persist.

This sub-section also highlights the significance of understanding the genesis and continued entrenchment of colonial structures and social forces to explain the continued inability of backward economies to shift to a modern economy. Colonialism has distorted or, as Ania Loomba puts it, "un-formed" and re-formed" societies.[1] Unless these colonial social structures are appreciated and considered in development interventions, modern development of countries is impeded. Finally, a summary is provided in sub-section 1.4.

1.1 Technology, innovation, and economic growth

Basic to the politics of technology and development is the theory of endogenous dynamics in capitalism where economic growth is assumed to be primarily driven by the innovation and application of new knowledge rather than through the accumulation of assets.[2] This means that new technologies and innovations do not simply accompany economic growth but that economic growth *depends* on technology and innovation, bringing about economic transformation *from within* the structure itself rather than from without.

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[1] Ania Loomba, *Colonialism/Postcolonialism: The New Critical Idiom*. London and New York, 1998, pp. 2, 185.

[2] Paul Sweezy alludes to the fact that there is reinforcing dynamic between innovation and accumulation. In capitalist societies, the profit-making process exists, and this in itself produces the pressure to accumulate, and accumulation generates innovation in order to preserve the profit-making mechanism and the class-structure on which it rests. See Paul Sweezy, 'Professor Schumpeter's theory of innovation', *The Review of Economics and Statistics* 25 (1), February 1943, pp. 93-96. On the other hand, Richard Nelson and Sidney Winter point out that there are difficulties associated with profit-maximizing motivation as an organizing factor for innovation because in most instances R&D efforts especially in medicine and agriculture are "not motivated by profits at all", but are governmental, or private not-for-profit institutions, or academic initiatives. See Richard Nelson and Sidney Winter, 'In search of useful theory of innovation', *Research Policy* 6 (1), January 1977, pp. 36-76.

Technology is fundamentally knowledge (the immaterial) embodied in useful new devices (the material) and new processes generated through a social process.[3] With this view, it is not surprising that the movement of people was identified by some economic historians as a key mechanism for technology transfer.[4] Thorstein Veblen largely contributed to the idea of technology as a social process. He declares technology "the immaterial equipment…of the community".[5] Building upon Veblen's idea, Clarence Ayres developed his *Theory of Economic Progress* anchored on the "tool-combination principle" and his technological "*law* of progress". Ayres wrote:

> Technology must be understood to include all human activities involving the use of tools – all sorts of tools … But tools are not technology ….This dilemma can be resolved and the technological process can be understood only by recognizing that human skills and the tools by which and on which they are exercised are logically inseparable. Skills *always* employ tools, and tools are such *always* by virtue of being employed in acts of skill by human beings.[6]

On this account, the physical tools or gadgets, instruments, and formulae (which nearly everyone today understands as *the* technology, but are actually *techniques*) and the human skills or knowledge necessary to put these tools into effective use are functionally not distinct. Milton Lower remarked that if "knowledge is *produced* by the skilled use of tools, then – among many other implications – it is merely foolish to ask if skills are something apart from tools."[7] Any useful device is, in part, proof of the knowledge base of the inventor that resulted in the creation of such devices. **Technology** then is not only the actual new product or process, but also the productive knowledge that is embodied in the product or process itself.[8] On the other hand, **technological innovation** is about "producing new knowledge or combining existing elements of knowledge in new ways", thus broadly about learning processes".[9]

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[3] There are subjective and objective, or tacit and codified aspects of technology. Tacit knowledge refers to those practical and analytical skills or 'rules of thumb' that cannot be codified, but are acquired through actual experience. Codified knowledge is typically found in manuals, specifications, codes, and standards. Tacit knowledge is difficult and not costless to transfer, and is specific to particular people or firms. See, Giovanni Dosi, Keith Pavitt and Luc Soete, *The Economics of Technical Change and International Trade*. New York: Harvester Wheatsheaf, 1990, p. 11.

[4] See, for example, David Jeremy, *Transatlantic Industrial Revolution: The Diffusion Of Textile Technologies Between Britain And America, 1790-1830s*. Cambridge, MA: MIT Press, 1981; David Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*. London; New York: Cambridge University Press, 1969; William O. Henderson, *Britain and Industrial Europe 1750-1870: Studies in British Influence on the Industrial Revolution in Western Europe*. Leicester: Leicester University Press, 1965.

[5] Thorstein Veblen, *The Place of Science in Modern Civilization and other Essays*. New York: B. W. Huebsch, 1919, p 325.

[6] Clarence E. Ayres, *The Theory of Economic Progress*, 2nd edition. New York: Schocken Books, 1962, p. vii.

In conventional economics, technology is believed in large part to depend on individuals' creativity and ingenuity as 'economic rationals'. Instrumental behaviour (the exercise of objective judgement to employ tools to manipulate nature to create products) is universal. And where interaction is governed by individual action, social structure and relations have minimal, if any, effect on rational, self-interested behaviour.[10] However, scholars outside of this dominant tradition strongly argue that rational instrumental valuation and individual creativity are not enough to generate technological progress. One reason is that human beings have 'bounded rationality', thus limited in formulating and solving complex problems and in processing information; consequently, they cannot make decisions based on strictly rigid rules of optimization because of uncertainty in complex situations.[11]

Giovanni Dosi and Luigi Orsenigo point out that the elements of uncertainty and limited information related to the search, development, and commercialization of technology, as opposed to perfect information in mainstream economics, present a problem for the exercise of complete rational thinking in technological processes.[12] To some degree, scientists and engineers employ heuristics or 'guide posts' where technological decisions are often made within a scientific paradigm. Also, the profit-motivated entrepreneurs are made dependent on the knowledge gained through past learning experiences because of uncertainties arising from both R&D activities within the specified performance and cost level, and the marketability of products or processes developed.

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[7] Milton Lower, 'The concept of technology within the institutionalist perspective', *Journal of Economic Issues* 21 (3), 1987, p. 1156.

[8] James Swaney, 'Our obsolete technology mentality', *Journal of Economic Issues* 23, 1989, pp. 570-571.

[9] Charles Edquist and Leif Hommen, 'Systems of innovation: theory and policy for the demand side', *Technology in Society* 21 (1999), p. 65.

[10] Swaney, 'Our obsolete technology mentality', p. 572.

[11] Herbert Simon, *Models of my Life*. New York: Basic Books, 1991.

Scholars do not discount the important role of instrumental valuation in technological processes; however, it is limited in the sense that productive knowledge is always developed, improved, or diffused into the economy in an integrated context.[13] Where there is bounded rationality, actors seek network relationships so that actors operate *within* an extant social institutional environment.[14] In fact, for an effective technology diffusion there has to be a coherence and integration of key institutions and forces – those responsible for formulating policies, performing R&D, financing R&D, producing the human resources, for bridging and promoting technology entrepreneurship. Innovators, competitors, customers, suppliers, government authorities, firms, industry, and sources of expertise, such as universities must be coordinated. [15]

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[12] Giovanni Dosi and Luigi Orsenigo, 'Coordination and transformation', in Giovanni Dosi, Chris Freeman, Richard Nelson, Gerald Silverberg, and Luc Soete, *Technical Change and Economic Theory*. London; New York: Pinter Publishers, 1988, pp 17-19.

[13] Walter Neale, 'Technology as social process: A commentary on knowledge and human capital', *Journal of Economic Issues* 18, 1984, pp. 573-580.

[14] Swaney, 'Our obsolete technology mentality', p. 572.

[15] See, for example, Roy Rothwell, 'The characteristics of successful innovators and technically progressive firms', *R & D Management* 7, 1977, pp 191-206; Robert G. Harris and David C. Mowery, 'Strategies for innovation: an overview', *California Management Review* 32, 1990, pp. 7-16; Pao-Long Chang and Hsin-Yu Shih, 'The innovation system of Taiwan and China: a comparative analysis', *Technovation* 24, 2004, pp. 529-539.

Indeed, there is a scholarly consensus that technology cannot be considered as solely technical in nature and analyzed independently of social organizations and processes. As Walter Neale points out, "knowledge of technology does not exist separately from the integration provided by institutions... and where individuals cannot *know how* independently of social organizations and processes, *knowledge is technology*, and *they are social*."[16] The rational instrumental and social dimensions of technological progress are bound together as the obverse and reverse of a coin and both are present at all times, shaping and re-shaping each other. Individual actors are embedded in social interaction, which concretely develops into networks or social configurations.[17] A network, according to Richard Swedberg and Mark Granovetter, means "...a regular set of contacts or similar social connections among individuals or groups."[18]

In this context, human actions are embedded in ongoing personal or group relationships, and people are bound together not by pure market exchange relations alone. As individuals in a network of relationships try to solve problems using the current tools, new knowledge is generated. And the knowledge derived from this process becomes a not insignificant part of "the body of lore from which individual human beings learn whatever they learn".[19] Ultimately, the knowledge derived from these processes and the tool-using skills to solve problems possessed by peoples in a culture do not come from the particular problems that are solved *per se* but from the cultural means-ends continuum in which the problems are solved. Cultures within firms or in inter-firm relationships and in the broader economy shape the tool-using, problem-solving behaviour of peoples. On this account, the alleged automatic progressiveness conventional economists assume is at best doubtful because the purposive technological behaviour of actors is intertwined with non-economic factors present in any social interaction: trust, power, cooperation, conflict, greed, and so on.

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[16] Neale, 'Technology as social process', pp. 573-4.

[17] Regine Heidenreich, 'Economics and institutions: the socioeconomic approach of K. William Kapp', *Journal of Economic Issues* 32, 1998, p. 965-966.

[18] Richard Swedberg and Mark Granovetter, 'Introduction', in Richard Swedberg and Mark Granovetter (eds.), *The Sociology of Economic Life*. Boulder, CO: Westview Press, 1992, p. 9.

[19] Clarence Ayres, 'The role of technology in economic theory', *The American Economic Review* 43 (May), 1953, p. 282.

Robert Solow was the first of the neoclassical economists to develop a theory of the 'residual' to explain aggregate economic growth.[20] 'Residual growth' constitutes all increases in output that cannot be accounted for by more capital or more labor. Solow's model includes capital, labor, and the residual as sources of growth. In Solow's model, technology is considered an exogenous variable.[21] The model tries to account for changes in key variables, i.e. the supply of products and the demand for inputs regarding which an economic agent, such as a firm, is assumed to have the capability to make optimal decisions because the sets of supply and demand choices are known.

The key assumption here is that a wide variety of technologies is available for firms to choose from as inputs to production. In other words, technology is not a variable in the production function. It is not something that is produced by the firm itself. Despite its limitations, Solow's modern growth theory continued to be popular in the 1960s and 1970s, although some American economists were puzzled when the 'residual' was found to be so large that growth could not be solely attributed to increases in capital and labour. Increases in capital per worker could only account for a small fraction of the long-run growth in output per worker in the American economy since the late 19th century. The rapid growth of the US economy was not a function of the scale or amount of inputs used, especially capital, rather of the growth of the stock of knowledge.[22]

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[20] Robert Solow, 'Technical change and the aggregate production function', *Review of Economics and Statistics* 39, 1957, pp 312-320.
[21] Richard Nelson, 'How new is new growth theory', *Challenge* 40, 1997, pp 29-58.

Alternative perspectives to neoclassical growth theory argue that it is the rate or direction of technological change or the incorporation of knowledge into the production capacity of firms and economies that increase efficiency and productivity, fuelling economic growth. There are three major approaches to understanding the sources of technological change, according to Vernon Ruttan. These are "induced technical change", "evolutionary theory", and "path-dependence", which he argues are leading us nowhere unless these three "island empires" are bridged.[23]

The 'induced technical change' includes the 'demand pull' tradition initially associated with the work of Griliches (1957) and Schmookler (1962, 1966), which underscore the importance of change in market demand on the supply of knowledge and technology. Although market demand is deemed the most important stimulus for majority of successful innovations, yet is it also wrong to say that it is completely determined by economic and market factors. Nuclear power and computers are examples of innovations which have "grown out of new scientific discoveries".[24] Technological innovation is problem-solving in nature so that market factors such as costs, consumer demands, and expectations of profits shape the development of technologies.[25] As Lundvall points out, even in the more exploratory basic science where it is perceived as more responsive to its own internal logic, to a certain extent, changes in demand parameters still influence the direction of the search for knowledge.[26] Ruttan (1997) argues, however, that the major limitation of the model is that the processes of learning, search and formal R&D remain inside the black box.

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[22] See, for example, Moses Abramovitz, 'Resource and output trends in the United States since 1870', *The American Economic Review* 46, 1956, pp. 5-23.

[23] Vernon Ruttan, 'Induced innovation, evolutionary theory and path dependence: sources of technical change', *The Economic Journal* 107 (444), September 1997, pp. 1520-29.

[24] Chris Freeman, *The Economics of Industrial Innovation*. Harmondsworth: Penguin, 1974; Keith Pavitt and W. Walker, 'Government policies towards industrial innovation: a review', *Research Policy* 5 (1), January 1976, pp. 11-97.

[25] David Mowery and Nathan Rosenberg, *Technology and the Pursuit of Economic Growth*. Cambridge, MA: Cambridge University Press, 1989, pp. 21-34.

The evolutionary theory of technological change was advanced by Richard Nelson and Sidney Winter in a series of articles in the mid-1970s, which became the basis of their book, *An Evolutionary Theory of Economic Change* (1982). An evolutionary theory of technological change is fundamentally concerned with the search for relatively superior innovations through the process of selection, thus open-ended. As Nelson notes "Technical change clearly is an evolutionary process; the innovation generator keeps on producing entities superior to those earlier in existence, and adjustment forces work slowly".[27] The strength of the Nelson-Winter model was its ability to build on the theory of the firm to provide a more realistic description of the internal working of the black box.

An attempt to build bridges between these approaches was undertaken by Giovanni Dosi (1982, 1988, 1990) whose works, according to Ruttan (1997), clearly employ a combination of the induced, evolutionary and path-dependent models, although rhetorically it espouses similarity with the Nelson-Winter evolutionary model. Dosi introduces the notion of 'technological paradigm', arguing that innovation is not completely random; rather it follows some regularity or a momentum of its own, thus being path-dependent.[28] There is some sort of an "ordered pattern of change". As an *outlook* or definition of the relevant problems and patterns of inquiry, a technological paradigm "defines contextually the needs that are meant to be fulfilled, the scientific principles utilized for the task, the material technology to be used".[29]

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[26] Bengt-Ake Lundvall, 'Introduction', *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter Publishers, 1992, p. 11.
[27] Richard Nelson, *Understanding Technical Change as an Evolutionary Process*. Amsterdam: Elsevier, 1987, p. 16.

As a "focusing device" or a "guide-post", scientists and engineers formulate their problems and choose their methods based on the 'habits of thought' created by a paradigm. So, then, when firms try to adapt or improve on a technology, they do not do it in a completely random manner. Instead the technology search is largely shaped by the firm's own stock of knowledge. And this stock of knowledge largely comes from the firm's own learning through in-house research and development activity, or from people that the firm has employed. Nelson and Winter used the expression "technological trajectory" to convey a similar idea.[30] A technological trajectory is defined as "technological progress along the economic and technological trade offs defined by a paradigm".[31] Both of these concepts suggest that the solutions of selected technological problems follow a pattern or a trajectory because the answers sought are based on highly selected principles derived from prior knowledge and experience.

Chris Freeman and Carlota Perez introduced the concept of 'techno-economic paradigm' rather than 'technological paradigm' to emphasize the fact that the changes required to effect growth go beyond the technological in nature but include economic factors, such as investment behaviour and confidence.[32] The concept refers to "a combination of interrelated product and process, technical, organisational and managerial innovations, embodying a quantum jump in potential productivity for all or most of the economy and opening up an unusually wide range of investment and profit opportunities". The interrelatedness of technologies comes from the fact that many technological improvements were made feasible only after some advances in associated fields were reached.

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[28] Dosi and Orsenigo, 'Coordination and transformation', pp. 15-16.

[29] Dosi, Pavitt, and Soete, *The Economics of Technical Change*, p. 84.

[30] See Giovanni Dosi, 'Technological paradigms and technological trajectories: a suggested interpretation of the determinants and directions of technical change', *Research Policy* 11, 1982, pp 147-162.

[31] Nelson and Winter, 'In search of a useful theory', pp. 36-76.

As a radical technology or innovation that defines the industry is diffused into the economy, a series of incremental changes and improvements are made by a horde of imitating firms so that new incremental knowledge or skills are accumulated by late adopters. Through these innovative activities the growth in the stock of knowledge of firms, industries, and even countries is highly specific to them and differentiated. On this account, the technology and competences acquired or developed by firms become partly appropriable knowledge accumulated over time through equally specific learning processes. They cannot be simply equated as information or a free good easy to acquire. The acquisition of tangible products, such as machinery or legal documents, such as patents, licenses or know-how contracts is not enough to build the so-called 'change-generating capabilities' of firms in countries attempting a catch-up. They need the practical and analytical knowledge and skills to master, adapt, and further develop the acquired technology. And these particular productive knowledge and skills are acquired through learning.

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[32] Chris Freeman and Carlota Perez, 'Structural crises of adjustment: business cycles and investment behaviour', in Giovanni Dosi et al. (eds.), *Technical Change and Economic and Economic Theory*. London; New York: Pinter Publishers, 1988, pp. 38-66.

Freeman and Perez, however, lament that despite the universal agreement among economists over these facts it is still common among economists to look to self-regulating market mechanisms and monetary policy, such as interest rates, as the main forces governing investment behaviour. Market mechanisms are limited in endeavours such as building an economy's technological capabilities, where uncertainties are a more prominent reality. Private investments by firms in knowledge-generating activities, such as R&D, are hard to come by unless potential innovators are provided with the right social and economic incentives.

The emergence of a group of East Asian countries as rapidly modernizing economies attracted a search for explanations. Several theories have been forwarded and there are some agreements among scholars on the identity of some of the key causal factors, such as rapid growth of the physical capital stock and high rates of investment in human capital.[33] Richard Nelson and Howard Pack, however, point out that the significant variations among these scholars lie in the causal mechanisms stressed. On the one hand, there are those who emphasize the role of investments in the rapid rise of these economies "along their production functions." On the other hand, are those who focus on entrepreneurship, innovation and learning that these economies had to go through before they could adopt and adapt borrowed technologies; they consider investment in human and physical capital as a necessary, but far from sufficient. [34]

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[33] See, Alice Amsden, *Asia's Next Giant: South Korea and Late Industrialization. New York: Oxford University Press, 1989; Paul Krugman, 'The Myth of Asian's Miracle', Foreign Affairs*, December 1994, pp. 62-78; Sanjaya Lall, *Learning to Industrialize*. London: Macmillan, 1987; Howard Pack and Larry E. Westphal, 'Industrial strategy and technological change: theory vs. reality', *Journal of Development Economics* 22, 1986, pp. 87-128; World Bank, *The East Asian Miracle: Economic Growth and Public Policy*. Oxford: Oxford University Press, 1993.

[34] Richard Nelson and Howard Pack and the World Bank, 'The Asian Miracle and Modern Growth Theory', October 1997,

Nelson and Pack contend that the mastery of technology by these countries in the 1970s and 1980s, of which they had no experience at all in the 1960s, could not be taken as a matter of routine. To have such a mastery over borrowed technologies, they argue, requires learning how to use them effectively, the development of new sets of skills, new ways of economic organization, and familiarization and competence in new markets. All of these require risk-taking, entrepreneurship and good management. The routine argument, they said, sends the wrong message – if a nation makes the investments and marshals the resources then development follows. It does not stress the learning and mastering of technologies and the risking process.

There is nothing automatic about the business of learning. The Soviet Union and Eastern European countries followed this prescription but no learning happened. Moreover, countries such as Spain had the prices right and high investment rates, but had far lower rates of growth than Northeast Asian countries. Behind the success of Japan, Korea and Taiwan are entrepreneurial firms and their ability to learn rapidly but, most important were the policy incentives and constraints they faced which shaped their actions and decisions.[35]

New knowledge that has not been applied in production and industry has no economic value. It has to be diffused into the productive system, finding its application in "clusters of related activities" known as "new technology systems".[36] For this reason

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http://www.worldbank.org/html/dec/Publications/Workpapers/WPS1800series/wps1881/wps1881.pdf, Accessed December 10, 2007.

[35] See, for example, Amsden, *Asia's Next Giant*; Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*. Stanford, CA: Stanford University Press, 1982; Robert Wade, *Governing the Market: Economic Theory of Government in East Asia Industrialization*. Princeton, NJ: Princeton University Press, 1990.

[36] Chris Freeman, John Clark and Luc Soete, *Unemployment and Technical Innovation: A Study of Long Waves in Technical Change and Economic Development*. London: Frances Pinter (Publishers) Ltd., 1982.

change tends to be concentrated in a few industries which have become known in the recent literature as the 'strategic' or highly productive industries.[37]

The above discussion presents technology and innovation as processes that are supply-driven. This means that "science leads to technology and technology satisfies market need."[38] A limitation of this model is an assumption that there is a linear flow of knowledge and activity from basic scientific research to commercial applications. There is no feedback process which makes it too simplistic, but useful as far as generating policy justifications for more public support of industrial R&D through government subsidies or funding of basic research.[39]

Charles Edquist and Leif Hommen point out that a 'systems-oriented' approach emphasizes interdependence and interactive learning which obviously the demand-side of the innovation process is given emphasis.[40] There are several component theories or models broadly encompassed in the systems approach. But common among them is the central importance placed on innovation and learning processes as technological innovation is actually about producing new knowledge and doing things in a new way. The chain-linked theory advanced by Nathan Rosenberg emphasizes the complementary strengths of different types of firms and that it is the effective coordination of "innovation chains" for design, production, and marketing of new products that is significant in the process of innovation.[41] This theory is biased toward product markets and product innovation.

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[37] Richard Nelson, 'Policy implications of Japan's growing technological capabilities: framing the issues', in Thomas S. Arrison, C. Fred Bergsten, Edward M. Graham and Martha Caldwell Harris (eds.), *Japan's Growing Technological Capability: Implications for the U.S. Economy*. Washington, D.C.: National Academy Press, 1992, pp. 209-215.

[38] Michael Gibbons et al. *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. London; California: Sage Publications, 1994, p. 51.

[39] See, for instance, Richard Nelson, 'The simple economics of basic scientific research', *The Journal of Political Economy*, 1959, 67, pp. 297-306.

[40] Edquist and Hommen, 'Systems of innovation', p. 68.

Erik von Hippel's theory of distributed innovation process locates product innovations in any one (or combinations) from three different sources of new knowledge or practices, namely the suppliers, producers, and users.[42] The extent of innovation activities of user, supplier or producer firms would depend on shares of 'economic rents' from a potential innovation. Innovation practices which are not rent-seeking occur in situations where no one firm has all the information required for innovation and there is no incentive for doing it alone. In this case, `know-how trading` takes place.

Lundvall`s theory of interactive learning underscores the learning dimension of user-producer interaction in product innovation.[43] He maintains that the encouragement of product innovation is limited with vertical integration arrangements. OEM (original equipment manufacturing) and ODM (original design manufacturing) arrangements in the international division of labour are examples of vertical integration.[44] Guided by the philosophy that they "do not compete with their customers and will not develop brands", and that "their business is manufacturing" contract manufacturing is faced with innovation constraints. Lundvall argues that the answer to this paradox is "organized markets", involving consensual regulation between users and producers wherein trustworthiness is rewarded and cheating is punished. Formal and informal rules on property rights, cooperation, long-term credit, and public good significantly affect an organization like business firms' inclination to innovate and to share information, hence arguably a nation-state's institutional set-up influences innovation and learning processes.[45] This has serious implications for the role of governments. Lundvall argues that government could intervene "in relation to the establishment and restructuring of user-producer relationships." Moreover, moving technological knowledge to production entails this array of institutions. On this account, Chris Freeman and Francisco Louçã argue that models "must include all social, economic, political, and institutional realities".[46]

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[41] See Nathan Rosenberg, *Perspectives on Technology*. Cambridge: Cambridge University Press, 1976.; Nathan Rosenberg, *Inside the Blackbox: Technology and Economics*. Cambridge University Press, 1982.

[42] Eric von Hippel, *The Sources of Innovation*. Oxford: Oxford University Press, 1988.

[43] See Beng-Ake Lundvall, `Innovation as an interactive process: from user-producer interaction to the national system of innovation`, in Giovanni Dosi et al. (eds.) *Technical Change and Economic Theory*. London: Pinter Publishers, 1988, pp. 349-369; Bengt-Ake Lundvall, `User-producer relationships, national systems of innovation and internationalisation`, in Bengt-Ake Lundvall (eds.) *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*. London: Pinter Publishers, 1992, pp. 45-60.

[44] Susan Berger, *How We Compete: What Companies Around the World are Doing to Make it in Today`s Global Economy*. New York: Doubleday, 2006, pp. 165-197. The international division of labour has given rise to what are termed ``lead firms`` and ``contract manufacturing firms`` especially in highly globalized industries, such as electronics and textile. Lead firms are brand-name firms. Some of them are vertically integrated, carrying out all the functions from design to sale, for both components and final products. Others, however, have turned over a few or all of their in-house functions (except marketing) over to contract manufacturers. These contract firms make a variety of products for lead firms. In the electronic firms there are three types of contract manufacturers: OEM (original equipment manufacturers), original design manufacturers (ODM), and global suppliers. Berger defines OEM as companies that manufacture products on order from brand-name firms but do not themselves develop brands or new designs. ODMs are companies that do design and manufacturing on orders from brand-name companies and do not develop

There are, however, limitations to the NSI approach. First, it is a concept mostly applied in the North and mainly as an *ex-post* rather than an *ex-ante* concept, meaning that the framework is applied where there is no adequate prior analysis of initial conditions by which present analysis can be compared.[47] Second, as is evident in the above definitions of NSI, there is a need to integrate institutions in such a way that synergies among them can be achieved. While the integration of institutions is quite

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their own brands. Global suppliers are a group of very large specialist contract manufacturers that mainly focus on manufacturing and have production sites around the world.

[45] Bjorn Johnson, 'Institutional learning', in Bengt-Ake Lundvall (ed.), *National Systems of Innovation: Towgrds a Theory of Innovation and Interactive Learning*. London: Pinter Publishers, 1992, pp. 23-67.

[46] Chris Freeman and Francisco Louçã, *As Time Goes By: From the Industrial Revolutions to the Information Revolution*. New York: Oxford University Press, 2001, p.109.

[47] Ibid., p. 14.

significant in NSI, this task can be more appropriately done by the state. This underscores the role of the state and the exercise of power in NSI. Nonetheless, the NSI framework does not have a theory of the state. Given these limitations, it is essential that the NSI framework be combined with compatible frameworks from other disciplines, such as political economy.

Susan Strange may exaggerate when she argues that "the state is in retreat" in the era of globalization because the state, though undergoing some transformation, certainly plays an important role in this whole process of change.[48] As Leo Panitch points out, the state is an active agent of the process of globalization itself[49] (including technological innovation) because it is the only institution empowered to make and enforce collectively binding decisions in the intra and inter-state system[50] so much so that international governance institutions also need the state to realize their goals. On this note, I suggest the notion of NSI as an historical structure can provide the desired inclusion.

1.2 NSI – an historical structure

There are no theories of national systems of innovation; rather there are conceptual frameworks or heuristics to explain the organization of innovation and production in a national context.[51] The origins of the NSI as a concept advanced by economists like Freeman and Lundvall reveal that it draws from insights in political economy, science policy, development studies, and economics of the institutional tradition. It is not surprising then that NSI is a concept with application potentials in economic development as gleaned from a joint paper by Bjorn Johnson, Charles Edquist and Bengt-Åke Lundvall.[52] But what is NSI?

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[48] Susan Strange, *The Retreat of the State: The Diffusion of Power in the World Economy.* Cambridge: Cambridge University Press, 1996.

[49] Leo Panitch, 'Rethinking the role of the state in an era of globalization', Paper presented at the American Political Science Association and reprinted in the Socialist Register, Mimeo, 1994.

[50] Geoffrey Underhill, 'Conceptualizing the changing global order', in Richard Stubbs and Geoffrey Underhill (eds.) *Political Economy and the Changing Global Order*. Don Mills, ON: Oxford University Press, 2000.

[51] Thanks to Prof. Richard Hawkins for emphasizing this to me.

Lundvall defines NSI as a system "constituted by elements and relationships which interact in the production, diffusion and use of new, and economically useful knowledge and that [these] encompasses elements and relationships either located within or rooted inside the borders of a nation state."[53] Freeman defines NSI as a network of institutions in public and private spheres whose activities and interactions are geared towards the production, adaptation, diffusion and application of technology in the economy.[54] Later, he emphasizes the national and regional dimension of the system within the context of an increasingly integrated world economy, arguing that although international linkages are growing in importance, the influence of national factors, particularly the education system, industrial relations, technical and scientific institutions, government policies, cultural traditions and many local institutions are fundamental to establish NSI.[55] In a more recent work, Freeman puts a spotlight on the complementarity and integration of these institutions in order to promote economic growth.[56] But most importantly he distinguishes between "narrow" and "broad" definitions of NSI, with the former focusing on "those institutions which deliberately promote the acquisition and dissemination of knowledge and are the main sources of innovation", and the latter "recognizes that these 'narrow' institutions are embedded in a much wider socio-economic system in which political and cultural influences as well as economic policies help to determine the scale, direction and relative success of all innovative activities." The synergies produced by this configuration of political, economic, technological, and cultural forces brought the "many remarkable achievements in craft industries as well as financial systems, shipping, the arts, medicine and science" onto "something new, associated with the predominance of capitalist *industry*." It provided a favourable policy environment which facilitated the shift from a trade- and finance-based economy to a manufacturing industry.

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[52] Björn Johnson, Charles Edquist and Bengt-Åke Lundvall, 'Economic development and the national system of innovation approach', Paper presented at the Globelics Conference, Rio de Janeiro, November 3-6, 2003, p. 3. While the concept was first used in the context of science policy, it draws inspiration from political economy, mainly from *Friedrich List's National System of Political Economy* (1841) wherein the build-up of a nation's (Germany) productive forces rather than allocation issues was considered key to economic development. Literatures on Third World development influenced Lundvall's notion of NSI Lundvall and Andersen (1988).

[53] Lundvall, 'Introduction', p. 2

[54] Chris Freeman, *Technology and Policy and Economic Performance: Lessons from Japan*. London: Frances Pinter, 1987.

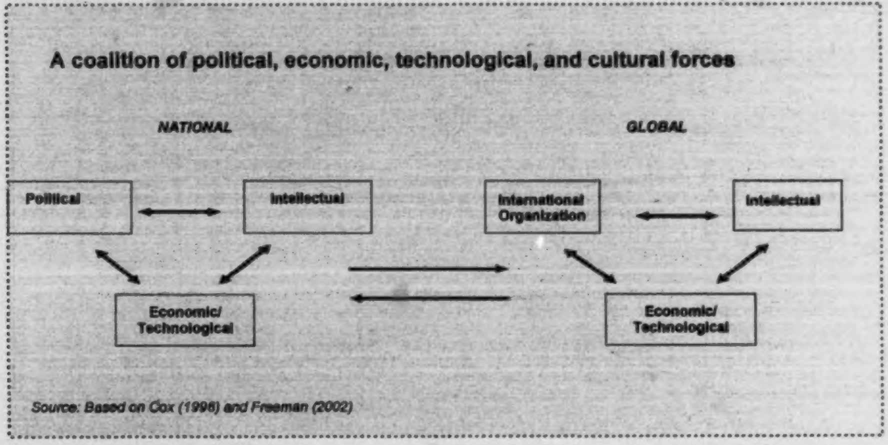
[55] Chris Freeman, 'The 'national system of innovation' in historical perspective', *Cambridge Journal of Economics* 19, 1995, p. 5.

[56] Chris Freeman, 'Continental, national and sub-national innovation systems – complementarity and economic growth', *Research Policy* 31, 2002, pp. 191-211.

Freeman's broader concept of NSI corresponds with Antonio Gramsci's notion of a modern state. The **modern state**, according to the Italian political economic theorist Antonio Gramsci, is an 'expanded' one which constitutes the interacting political, intellectual, and material forces which he termed a **national historic bloc**. These interacting forces correspond to those forces (or institutions) which Freeman and Lundvall suggest as crucial in a functional NSI. I propose that NSI is an historical structure – a cluster of élites - technological, economic, intellectual, political, military, and religious – whose decisions and 'often uneasy alliance' or interaction produce structures which facilitate or constrain the development and effective use of productive knowledge in an economy (Figure 1-1).

The relationship of these forces is non- deterministic. This means that the political (politicians and bureaucrats) and cultural élites (intellectuals, religious leaders, and educators) exert influence (intentionally or unintentionally) on the economic élites just as much as they are also influenced. Furthermore, Gramsci's idea of power is exercised primarily in the form of **hegemony** or moral and intellectual leadership. The ruling élites are able to realize key decisions which are beneficial to them, either by maintaining the status quo or promoting change, through consensus rather than coercion. The consensual assent of the people ruled is achieved through the promotion of 'common sense' ideas – these are unquestioned ideas embraced by the people.[57]

Figure 1-1 NSI as an historic bloc


A coalition of political, economic, technological, and cultural forces
NATIONAL
GLOBAL
Political
Intellectual
International Organization
Intellectual
Economic/ Technological
Economic/ Technological

Source: Based on Cox (1996) and Freeman (2002)

Gramsci's notions of national historic bloc and hegemony were appropriated by Cox in the international arena. Cox argues that as a global mode of production (e.g, Fordist or the present knowledge-based) penetrates into all countries it brings about links among national productive forces, thus forming a transnational or **global historic bloc**.

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[57] See Robert Cox, 'Gramsci, hegemony, and international relations: an essay in method (1983)', in Robert Cox with Timothy Sinclair, *Approaches to World Order*. Cambridge; New York: Cambridge University Press, 1996, pp. 124-143.

The economic life of subordinate states is penetrated by and intertwined with that of dominant state(s). Thus, there is "passive revolution" in dominated states as the impetus for political economic change does not arise out of the local economic development dynamics; instead, it becomes a reflection of international or global developments.

There is also the promotion of hegemonic consciousness at the global level through the universalization of norms, institutions and mechanisms which lay down general rules of behavior for states and for those technological, economic and intellectual forces that act across national boundaries. This is undertaken through international organizations and it affects NSI in the sense that the sum of all arrangements governing international issues, such as production, finance, security, knowledge, and development, generally termed "world order", influences the development, financing, regulation and protection accorded to technology.

Historical structures are frames of reference wherein the trends arising from the sequence of outstanding historical events are analyzed in order to explain a technological and economic development (or underdevelopment) phenomenon. The component social elements or historic bloc are engaged in an interchanging sequence of action and reaction indicating the inextricable linkage between politics, economics, and culture at the national and global levels. There are rival coalitions of forces in a country, and the relationship between more insular nationalist and globalist historic blocs is described as both conflictual and cooperative.[58] Given that this uneasy 'alliance' of forces is historical, there is the likelihood of a particular coalition to emerge, flourish, and also fall apart. Thus change is possible, and such an impulse could come from any of the component forces given that the relationship among them is non-deterministic.

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[58] See, for example, A. G. Hopkins, 'Capitalism, nationalism and the new American empire', *The Journal of Imperial and Commonwealth History* 35 (1), March 2007, pp. 95-117.

There is, however, historical variability in the creation of states. There are different forms of state-society complexes (or expanded state, if you will), according to Cox, which go beyond the blanket typology of strong and weak states. Hannes Lacher argues that the variability of nation-states as a social form can be analyzed by using *property relations* rather than production relations as the analytical tool.[59] Here, property relations refer to the struggle over the control of **'authoritative' power** (or political power) and the **'allocative' power** (or economic power). The power for surplus extraction, through the control over people, is called authoritative resource; the control over things and eventually nature is called allocative resource.[60] In other words, we can determine whether a state is modern (capitalist) or pre-modern (e.g. absolutist, patrimonial) by examining the relationship between authoritative and allocative powers as far as economic surplus extraction is concerned.

In essence, in pre-modern or pre-capitalist (e.g. absolutist and patrimonial) societies, there is a real *unity* of the political and economic (and cultural) forms of power. The authoritative (i.e., the bureaucratic, military, and judicial) powers possessed by the feudal ruling élites were used to exploit the peasantries using the state office.[61] Lacher argues that the ownership of the means of production through the accumulation of authoritative power by lords gives them political and legal rights over access to economic surplus, enabling lords to reproduce themselves as lords. Economic development then is prevented because the logic of wealth accumulation by the ruling élites is not governed by the criteria of efficiency of production, rather through coercion or exploitation through extra-economic means.[62] Hence, Robert Brenner argues that pre-modern property relationships are a hindrance to overall economic development, hence the importance of transforming property relations among societies.[63]

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[59] Hannes Lacher, *Beyond Globalization: Capitalism, Territoriality and the International Relations of Modernity*. London and New York: Routledge, 2006, p. 51.

[60] Ibid., p. 37.

[61] Richard Lachmann, 'Comparisons within a single social formation: a critical appreciation of Perry Anderson's lineages of the absolutist state', *Qualitative Sociology* 25 (1), Spring 2002, p. 91.

By contrast, Max Weber pointed out that the **modern state** is distinct from pre-modern institutions because power relations in the economic and political spheres are separated "from all personal authority of individuals", such as the monarchy and feudal warlords and power become "an attribute of the community."[64] A *modern state* form of government, by definition, was impersonal, based on popular mandate rather than on the authority of individuals. This idea of the 'modern state' is shared by structural historical materialists who refer to the modern state as a **capitalist** state. This form of state, Lacher argues, is "autonomous" and "not just relatively". He notes:

> [Capitalist] states never just codified the prevailing world market strategies of firms, nor did they simply execute the global interests of 'their' capitalist classes. States construct social spaces, creating a specific nexus between territorially based political authority and the different scales of accumulation, from the local to the global. They thereby shape and limit possible strategies of firms and classes.[65]

In a modern or capitalist society, the power to extract surplus is premised on the control over property in the means of production located in the market (rather than the possession of political authority) which, Lacher argues, is "the decisive aspect in the dynamic of productive and commercial development".[66] Labour is transformed as a commodity sold in the market or in the private sphere, producing a class of wage-earning workers, and the establishment of absolute private property, creating an industrial capitalist class. The state is no longer directly implicated in capitalist exploitation because of the privatization of some forms of political domination in the economy (or market). The privatization of surplus extraction in the economic domain leaves the role of the state in the public domain to be the formulation and enforcement of rules for a market economy to function.

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[62] Ibid.

[63] Robert Brenner, 'The social basis of economic development', in John E. Roemer (ed.), *Analytical Marxism*. Cambridge, England: Cambridge University Press, 1986.

[64] Max Weber, *Economy and Society: An Outline of Interpretive Sociology*, edited by Guenther Roth and Claus Wittich, transl, Ephraim Fischoff et al. Berkeley, CA: University of California Press, 1978, pp. 600, 998; Liah Greenfeld, 'Nationalism and modernity' *Social Research* 63 (1), Spring 1996, p. 9.

[65] Lacher, *Beyond Globalization*, p. 155.

Wood maintains that Western conceptions of modernity conflate the rise of Enlightenment rationalism (the elevation of reason over ignorance and superstition) with the development of capitalism.[67] This conflation is also reflected in an understanding of 'bourgeois' as identical to 'capitalist'. **Capitalism** is used in this study to differentiate from mercantile capitalism. The latter is the age-old exploitation of price differential between segmented markets, buying cheap products in one market to sell at a higher price in another, but which creates only opportunities for exchange. It marked the beginning of "the pursuit of ever-increasing wealth" through "profit-oriented production for market exchange where it becomes imperative for producers to produce for the market".[68] In other words, this distinct type of capitalism emerging is production-oriented (and not necessarily equated with industrial capitalism because it actually first developed in English farming practices in England).

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[66] Ibid., p. 37.

[67] Ellen Meiksins Wood, 'Capitalism or enlightenment?', *History of Political Thought* 21 (3), Autumn 2000, p. 405.

[68] William Welch, 'In the national interest: interview with Liah Greenfeld', *Vision: Insights and New Horizons*, Spring 2006, http://www.vision.org/visionmedia/article.aspx?id=1329, accessed November 3, 2007; Ellen Meiksins Wood, 'From opportunity to imperative: the history of the market', *Monthly Review* 46 (3), 1994, pp. 14-26.

Historical accounts indicate rationalization or enlightenment to have not necessarily manifested itself in all time and space in a culture of capitalism. For example, in France, the enlightenment idea of 'progress' and 'equality' (e.g., Condorcet) was thought to be achieved through reason, while in England (e.g. Locke) progress was paired with 'industriousness' closely associated with "productivity and profit making". The 18th-century French bourgeoisie was not an industrial capitalist class, but an officeholder, a professional, even an intellectual whose material interests were bound up with the state through stipends from the state or through exemption from taxes which burdened the Third Estate.[69]

Essentially, the interest of non-capitalist bourgeois was typically expressed in the commitment to civil equality which, more often than not, meant access to state office. What is of most significance here is that the culture of the French Enlightenment led to a material and institutional interest of the intellectuals toward access to the state, to the lucrative resources of state salaries, pensions and privileges. But this was "less a symptom of 'modernity' than a feature of the *ancien régime* and the corporate structure of the absolutist state…[where] the state and office were primary economic resources." Research projects of those intellectuals or professionals in the Paris Academy, for instance, were dictated by the essential functions of the state rather than of the economy.[70] This means the rationalism and modernity in France did not result in a 'capitalist state'.

By contrast, the English bourgeoisie some, of whom were also members of the Royal Society as scientists and politicians (e.g. Isaac Newton, Robert Boyle, and William

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[69] Wood, 'Capitalism or enlightenment?', p. 408-413.
[70] Ibid., p. 413-17.

Petty) came from the landed class, especially from the gentry – men who did not regard their intellectual pursuits as a kind of professional activity, let alone a type of office holding. The early preoccupation of the Society was with the improvement of the agriculture sector through enhanced productivity. One of the Society's earliest projects was a countrywide survey of the technological needs of English farming, which in 17th century or earlier was already subjected to the requirements of a competitive market or agrarian capitalism. In England the landed were transformed into capitalists and were also the political ruling class. The first agrarian capitalist and industrial capitalist systems were established first only in England and not in France and the entire Western Europe (except Holland) and was presented with a unique ideology of progress based on technology, innovation and the enhancement of labour productivity.[71]

What is the implication of Gramsci's theory of the state for the 'lack of political will' problem? I argue that crucial to our explanation about different attitudes and behaviour among nation-states toward innovation systems is an understanding of the different types of states. A modern state is essential to build an NSI because such a state is more inclined to use its political power to extract surplus from its people in the private economic domain rather than from the public political domain. By providing an institutional environment conducive for owners of private property to use their allocative power to better themselves, freedom to use innovativeness and creativity is increased. This fundamental synergistic institutional dynamic allows innovative processes to progress. As Erik Reinert puts it

> The *modern state* creates the institutions enabling improvements in production and distribution, and creates the incentives that make the vested interest of the entrepreneur coincide with the vested interests of society at

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[71] Ibid., p. 417.

> large. Institutions encompass everything from legislation to infrastructure, patents to protect new ideas, schools, universities, and standardization of units of measurements, for example.[72]

Even though concepts of 'state' developed differently in other states, and for this reason are not necessarily equivalent to the English concept of 'state'[73], "the inspiration for it, in the final analysis", Greenfeld asserts, came from nationalism, which is "incommensurable with a personal government."[74] Serving as "the cohesive factor" of overlapping elements of a social formation, a modern state is capable of defining a national vision of collective destiny rather than of particular interest. Such a form of state is crucial in the integration of forces and institutions necessary not only to reach a certain level of technological achievement but to have that achievement reflected in a comparable level of innovation, used by society for economic modernization. For this reason, Nicos Poulantzas argues, the state becomes the object of "political class struggle" which is "the motive force of history", the "nodal point of the process of transformation".[75]

There is nothing self-evident about a modern social formation that supports innovation and production systems. The integration process that Freeman underscores requires political power. This is where Gramsci's historic bloc, which constitutes interacting political, cultural, and economic elites, is salient because they provide the intellectual, political, and economic leadership to develop that system.[76] The task of intellectuals and other cultural actors is very important in the creation of NSI as they develop and sustain mental images to promote the desired norms and achieve consensus.[77] I then underscore the role of 'belief-systems' or ideology in the transformation process. Nationalism, scientism and developmentalism are some of those mental images which I suggest are significant in building a national system of innovation.

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[72] Erik Reinert, *How Rich Countries Got Rich...and Why Poor Countries Stay Poor*. New York: Carrol & Graf Publishers, 2007, p. 121.

[73] For example, in France the *'etat'* originally acquired its political meaning from association with the person of the king, and later meant the government bureaucracy because the powers delegated to and exercised by king's officials during Richelieu's ministry grew very extensive, and Richelieu insisted that the officials represented the king's authority itself.

[74] Greenfeld, 'Nationalism and modernity', p. 26.

[75] Nicos Poulantzas, *Political Power and Social Classes*, transl. T. O'Hagan. London: NLB and Sheed and Ward, 1973, pp. 76-77.

1.3 Nationalism, scientism, and developmentalism

Germaine Hoston argues that politics or power relations certainly determine who gets what and who benefits in any social relations, but what actors believe is strikingly related to their politics.[78] Broadly, there are two kinds of ideas, according to Cox. These are "collective images" and "intersubjective meanings", and both are important parts of NSI as they underlie or substantiate why things are done in certain ways, enabling actors to view reality in the same way. Collective images are "differing views as to both the nature and legitimacy" of a prevailing social order. Intersubjective meanings, on the other hand, are "shared notions of the nature of social relations."[79]

As a common ground of social discourse is established, intersubjective meaning shapes the way that rulers think about possibilities of rule, Anthony Payne argues.[80]

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[76] Antonio Gramsci, *Selections from the Prison Notebooks of Antonio Gramsci*, edited and transl. Quintin Hoare and Gerard Nowell Smith. New York: International Publishers, 1971, p. 258.

[77] Cox, 'Gramsci, hegemony', p. 132.

[78] Germaine A. Hoston, 'The state, modernity, and the fate of liberalism in prewar Japan', *The Journal of Asian Studies* 51 (2), May 1992, p. 288.

[79] Robert Cox, 'Social forces, states and world orders: beyond international relations theory', in Robert Keohane (ed.) *Neorealism and its Critics*. New York: Columbia University Press, 1986, pp. 217-225.

[80] Anthony Payne, 'The study of governance in a global political economy', in Nicola Phillips (ed.) *Globalizing International Political Economy*. New York: Palgrave Macmillan, 2005, p. 71.

Examples of an intersubjective meaning are those notions that scientists are apolitical individuals and that science is separated from the interests of society (the pure science ideology); that certain rules apply for the protection of intellectual property, technology transfer, and competition (or anti-trust policy) is in the common interest of all trading countries; and that certain kinds of behavior are to be expected from governments of trading countries such as to level the playing field by avoiding active intervention in the economy in order not to disrupt the workings of the 'invisible hand' of market forces. Clearly, ideas are historically conditioned and they become the basis of both constitutive and regulative institutions.

Inasmuch as ideas are perceptions of a segment of social forces about their material and social conditions or capabilities, these mutually reinforcing forces, through their institutionalized political actions are the social structures of innovation and production committed to fostering capitalism in the context of a global order. Conversely, the fragmentation of these forces or the lack of coherence and synchronization of efforts could result in technological and economic underdevelopment. One major reason for the lack of coherence is the power relations and interests of these forces and the dynamics of conflict and cooperation that come with them.

Intellectual élites, bureaucrats, and politicians are significant actors in a NSI just as much as scientists and researchers, labor élites, or corporate professional managers. They are the forces which determine the development paradigm, the patterns of social organization, the governing rules and laws, and the ideology which create the milieu of agency at the closely interrelated production, state, and global levels. There are different configurations of these forces with different understandings of their realities in different places and times; hence there are rival structures and potential alternative paths of social organization.[81]

Nationalism and 'scientism' are collective images of identity therefore they structure the social reality to which economics, like any form of social inquiry, must address. Nationalism has three usages, according to Anthony Smith, i.e. as a socio-political movement, a language and symbolism, and as an ideology of the nation.[82] Among these three dimensions of nationalism, the usage as an ideology – the ideals and tenets – gives "force and direction." From this point of view, nationalism is defined as "an ideological movement for attaining and maintaining autonomy, unity and identity for a population which some of its members deem to constitute an actual or potential 'nation'. In most cases it is a political project for attaining independence by a small group of population, usually the élites "who possess a general concept of the abstract 'nation' and seek to create particular nations 'on the ground'."

Smith asserts there are nationalist movements without nationalist sentiment. A **nationalist sentiment** is defined as the feeling of collective belonging or strong attachment to and pride in the nation which forms the foundation and basis of social integration.[83] Smith argues that this should not be confused with nationalism as an ideology and language because one can have a nationalist movement for political independence, for example, without any real diffusion of national sentiment. There is a strong sense of national unity and identity that accompany a nationalist sentiment. **National identity** means the nation possesses a particular characteristic or identity which Max Weber calls "irreplaceable culture values", while **national unity** means it is united, both as a compact territorial unit and a fraternity of citizens.[84] In this study, **nationalism** means **nationalist sentiment,** which Floro C. Quibuyen defines as "the cohesive bonds, primarily cultural and moral, uniting a people into a national community in which the common good is protected and promoted."[85]

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[81] Cox (2002) points out that there are three salient forms of capitalist political economy: (1) the Anglo-American individualistic-competitive form; (2) the European social market form; and (3) the East Asian mercantilist form. Each of these forms of political economy has generated ideological representations, with hyperliberalism as the ideology of the Anglo-American form, with an unregulated open global movement of money and goods. The European model is underpinned by Christian democracy and social democracy while Asian capitalism has been constructed under the rubric of developmentalism underpinned by a "more heterodox and pragmatically-oriented" economic thought and by Confucianism. See Robert Cox with Michael Schechter, *The Political Economy of a Plural World: Critical Reflections on Power, Morals and Civilization*. London and New York: Routledge, 2002, pp. 89-90; Mark Beeson, *Regionalism and Globalization in East Asia: Politics, Security and Economic Development*. Hampshire, UK and New York: Palgrave, 2007, p. 100-101.

[82] Anthony D. Smith, *Nationalism: Theory, Ideology, History*. Malden, MA: Polity and Blackwell Publishers, 2001, pp. 6-9.

A nationalist sentiment is akin to what the most influential 19th-century Japanese thinker, Yukichi Fukuzawa, calls the "spirit of civilization". In the face of an expanding predatory Western expansion characterized by social Darwinism, a robust nationalist sentiment to assimilate Western culture was seen by Fukuzawa as essential for survival, a strong sense for locating the national in the global. Fukuzawa's message to the Japanese society was uncompromising at a time when 'revolutionary' social change had to take place:

> We must not import only the outward forms of civilization, but must first make the **spirit of civilisation** ours and only then adopt its external forms…The cornerstone of modern civilisation will be laid only when **national sentiment** has thus been revolutionised, and government

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[83] Liah Greenfeld, *The Spirit of Capitalism: Nationalism and Economic Growth*. Cambridge, MA and London, England: Harvard University Press, 2001, pp. 21,24; Anthony D. Smith, 'Theories of nationalism: alternative models of nation formation', in Michael Leifer (ed.) *Asian Nationalism*. London, UK: Routledge, 2000, p. 1.

[84] See Anthony D. Smith, 'The problem of national identity: ancient, medieval and modern?, *Ethnic and Racial Studies* 17 (3), 1994, p. 379; Anthony D. Smith, *Nationalism and Modernism: A Critical Survey of Recent Theories of Nations and Nationalisms*. London, New York: Routledge 1998, p. 90.

[85] Floro C. Quibuyen, *A Nation Aborted: Rizal, American Hegemony, and Philippine Nationalism*. Quezon City: Ateneo de Manila University Press, 1999, p. 177.

> institutions with it. When that is done, the foundations of civilization will be laid, and the outward forms of material civilization will follow in accord with a natural process without special effort on our part, will come without our asking, will be acquired without our seeking. This is why I say that we should give priority to the more difficult side of assimilating European civilization. We should reform **men's minds**, then turn to government decrees, and only in the end go out to external things.[86] (emphasis added)

Nationalism is fundamental to any project of modernization because it indicates what Greenfeld calls "a secular form of collective consciousness", a mental state that is orientated towards broad-based modern economic action which is "a crucial factor in the emergence of modern economy". As a form of social consciousness, a way of cognitive and moral organization of reality", nationalism becomes the drive for establishing a modern economy, characterized by an intensive pursuit of highly productive economy – the "spirit of capitalism". It influences capitalism because of its "competitive nature – the competition between nations for economic superiority", and this "creates a very strong commitment among populations to their nation's prestige." She further explains that "when the struggle for prestige takes place in the economic sphere", it generates "endless economic competition", because competitiveness becomes a measure of success.[87]

Nationalist sentiment, in its origins in Western Europe, was closely linked to capitalism, which are key aspects in modernization. Greenfeld argues that nationalism, not industrialization, was the basis of the establishment of and the constitutive element in a modern society. National identities and ideologies of nationalism preceded industrialization and the institutionalization of capitalism as well as the development of the state and secularization of culture. What's interesting in her argument was that the transformation from traditional to modern forms of economic and political organization requires a conception of social order which makes social mobility legitimate, and the separation of sovereignty from the Sovereign (or Prince) to become an attribute of the community.

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[86] Alastair Bonnett, 'Occidentalism and plural modernities: or how Fukuzawa and Tagore invented the West', *Environment and Planning D: Society and Space* 23 (4), 2005, p. 512, citing Fukuzawa 1973 [1875], pp. 17-18.

[87] Greenfeld, *The Spirit of Capitalism*, pp. 21, 23.

Greenfeld's thesis received many criticisms. It is of course a logical possibility that nationalism is not a causal factor for capitalism which Greenfeld, according to Charles Tilly, "prudently denies" or simply silent about. Tilly notes that she "accordingly distinguishes between economists' story of *how* and her – motivational – story of *why*" so this made him conclude that "the dual processes by which first awareness of a shared nation spreads and then that awareness motivates economic effort remain underspecified and mysterious." [88] Christopher Dyer also voiced his concern with "a mentality" affecting capitalism, saying that "if there is a connection [between nationalism and capitalism], then the ingrained belief that economic change preceded the emergence of new political ideas will have to be disproved." [89] Dyer's view is towards economic determinism. An historical structure as framework of analysis does not privilege the economy as the primary driver of change at all times. As the specific cases of England, US, and Japan are examined (Chapters 2, 3 & 4), early in the development of these countries, nationalism played a role in the formation of agrarian capitalist economy.

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[88] Charles Tilly, 'Review – The Spirit of Capitalism: Nationalism and Economic Growth by Liah Greenfeld', *Political Science Quarterly* 118 (4), Winter 2003, pp. 714-715.

[89] Christopher Dyer, 'Review- Power and Profit/The Spirit of Capitalism', *History Today* 53 (6), June 2003, pp. 57-8.

Ellen Meiksins Wood maintains that a different capitalist system first emerged in Britain in the agrarian sector of 16th-century England[90], but this could arguably have been fuelled by a 'collectivist nationalism' present in medieval England (Chapter 2). A "social property relations" emerged where for the first time both capital and labour became "utterly dependent on the market for the most basic conditions of their own reproduction."[91] Wage-workers sell their labour-power as a commodity in the market and capitalists depend on the same market to buy labour-power, the means of production, and to sell for profit the goods and services produced by the workers. This unique system of market dependence in food production – agrarian capitalism – would set in motion a relentless compulsion to compete, to produce cost-effectively, to maximize profit, to reinvest surpluses, and systematically to increase labour-productivity through innovation and by improving the productive forces, says Wood. Agrarian capitalism, which had completely transformed the most basic human relations and practices, had impacted a dynamic English economy in the 17th century and would eventually give rise to capitalism in its mature, industrial form in late 18th-century England. Gregory Clark points out that agricultural technology and the general efficiency of the entire English economy were static from 1250 until in the 1600s when technological advance in agriculture provided a reinforcing source of dynamism in the English economy.[92] But why did it take that long?

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[90] Kenneth Pomeranz and Roy Bin Wong, however, recognized that there were equivalent ideas, practices, and institutions in other parts of the world, particularly in 16th-century China, which resemble in certain important ways those that appeared in 19th-century Europe which we call 'modern'. For instance, the Chinese market economy was already characteristically sophisticated in the 16th century as the Chinese were "leasing land and then subleasing it…were selling shares in the produce of a particular plot of land, and setting up what we would today call trusts." Another seemingly 'modern' practice was specialization of tasks and certain kinds of impersonal mechanisms such as contract enforcement so that production and exchange of goods, such as soy sauce, cloth and so on and so forth were made possible. As Wong and Pomeranz point out, this revisionist view does not presuppose a 16th-century China as 'modern', rather that developments in Europe were simply "European"; "it was not 'modern'…and it is a fundamentally different proposition. It disengages the notion of modernity from those traits that appeared in Europe." See Kenneth Pomeranz and Roy Bin Wong, 'China and Europe: 1500-2000 and Beyond: What is Modern?', 2004, http://afe.easia.columbia.edu/chinawh/web/s1/index.html, pp. 1-2.

[91] Ellen Meiksins Wood, *The Origin of Capitalism: A Longer View*, 2nd edition. London: 2002, pp. 93-121

It can be argued that it was when nationalism and the extended and widespread application of technological knowledge in manufacturing that English capitalism had 'matured'.[93] David Hume suggested that "the best way to improve agriculture is through the roundabout way of first improving manufacturing industry".[94] **Science** here is used loosely to mean activities, procedures and attitudes such as an abiding respect for observed facts shaped by day-to-day human concerns rather than a rigorously systematized body of knowledge. David Mowery and Nathan Rosenberg maintain that the development of new machine technology during this early period rested on mechanical skills and considerable creativity in conception and design, which was independent from scientific research.[95]

The synergistic dynamism between agriculture and industry, Friedrich List argued, is largely generated by the double impact of the increased demand for farm products from an expanding nonfarm sector and the development of more efficient production methods resulting from the application of technology.[96] Yujiro Hayami and Vernon Ruttan, expanding the Kuznets-Schultz theory, maintain that the relationship between the two sectors lies in "the economic behaviour of public and private sector suppliers of knowledge and new inputs and the economic response of institutions to new economic opportunities as components of the economic system."[97] Institutional innovation is important in this process because institutions that have worked in the past to foster growth could become an obstacle for further economic development, as those who benefit want status quo to protect their vested interests.[98] Hayami and Ruttan note that "collective action leading to changes in the supply of institutional innovations involves struggles among various vested interest groups...more complex than the clear-cut, two-class conflict between the property owners and the propertyless." It also depends "critically on cultural tradition and ideology, such as nationalism, that make certain institutional arrangements more easily accepted than others.[99]

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[92] Gregory Clark, 'The long march of history: farm wages, population and economic growth, England 1209-1869, *The Economic History Review* 60 (1), February 2007, pp. 97-135.

[93] Margaret Jacob, *Scientific Culture and the Making of the Industrial West*. New York: Oxford University Press, 1997.

[94] Hume (1688) as cited in Reinert, *How Rich Countries Got Rich*, p. xxvi.

[95] Mowery and Rosenberg, *Technology and the Pursuit of Economic Growth*, pp. 8, 21-28.

[96] Friedrich List, *National System of Political Economy*. London: Longmans, Green and Co., 1885, pp. 235-258.

Greenfeld points out that "science and nationalism are related, and they are related directly, nationalism being one of the central factors, perhaps the most important one, in the institutionalization of science." It was no coincidence, she notes, that "science was first institutionalized in England", fulfilling "an important function for English national identity and for this reason was accorded a place of honor in the English society and provided with the massive social support it needed to be institutionalized." Such a high national prestige given to science in England was due to the fact that the idea of the 'nation' in English society reflected the high value accorded to the faculty of reason, "the possession of which made men fundamentally equal and entitled each and everyone to liberty." This value was at the source of the core properties of English nationality – "a critical mind, a preference for empirical knowledge, a distrust for dogmatism and enthusiasm."[100] Since Francis Bacon (1561-1626), "science had been considered the sign of superiority of the moderns over the ancients", "a sign of a nation's greatness", "the foundation and the guarantee of its strength and virtue."[101] Literary superiority was regarded by the English as "less important because it was considered less consistent with the English national character." The pursuit of science was "a matter of national prestige", a "service of the nation", and "a source of legitimation".

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[97] Yujiro Hayami and Vernon Ruttan, *Agricultural Perspective: An International Perspective*, revised and expanded. Baltimore and London: The Johns Hopkins University Press, 1985, p. 3. Schultz (1964) suggested that technological change – new husbandry techniques, better seed varieties, more efficient sources of power, and cheaper plant nutrients – create significant growth in productivity. His theory of agricultural development fits with Kuznets' (1966) wherein the development of economic and social institutions for the systematic application of scientific knowledge to economic activity is the primary sources of sustained growth in productivity and in per capital income.

[98] Mancur Olson, *The Rise and Decline of Nations*. New Haven: Yale University Press, 1982, p. 74.

[99] Hayami and Ruttan, *Agricultural Perspective*, pp. 95-96.

The notion of collective destiny was expressed by List in what is now considered his classic book, *National System of Political Economy*, when he said: "It is the task of politics to civilise the barbarous nationalities, to make the small and weak ones great and strong, but, above all, to secure to them existence and continuance."[102] And to accomplish this task, he adds, requires "*the economical development of the nation*" for the ultimate goal of preparing the national economy "for admission into the universal society of the future." It is clear that List, whose name has been associated with protectionism, was actually not against a concept that is presently referred to as globalization. Rather, protectionist policies were a temporary strategy until the national economy attains a certain level of development of its productive capability.

In List's theory of productive powers, he argued that *the power of producing wealth* is more important than wealth itself because "it insures not only the possession and the increase of what has been gained, but also the replacement of what has been lost." List, in the present parlance, was arguing for the value of innovation. He explained that the cause of a nation's wealth and progress lies in "productive capabilities" which he argues as the "accumulation of all discoveries, inventions, improvements, perfection, and exertions of all generations which have lived before us; they form the *mental capital of the present human race*." For him, free competition between two nations can only be mutually beneficial when they compete in a nearly equal position of development. List's words of advice to the developing countries of his time remain applicable today:

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[100] Greenfeld, 'Nationalism and modernity', p. 19, 27.

[101] Liah Greenfeld, 'Science and national greatness in seventeenth-century England', *Minerva* 25 (1-2), Spring/Summer 1987, pp. 107-122.

[102] List, *National System of Political Economy*, pp. 175, 133, 140.

> [A]ny nation which owing to misfortunes is behind others in industry, commerce, and navigation, while she nevertheless possesses the mental and material means for developing those acquisitions, must first of all strengthen her own individual powers, in order to fit herself to enter into free competition with more advanced nations. [103]

Nationalism engenders a developmental mindset, a symptom as well as a cause of a modernizing society. Although developmental ruling élites are closely associated with the East Asian developmental states, some scholars point out that they have existed earlier in history as in England and Western Europe, especially Holland and Germany.[104] Bai Gao points out that ideology or "a way of seeing things" influences the national strategy to secure a dynamic economy.[105] On this account, ideas are a significant part of the NSI as they provide societies with what Margaret Jacob termed a "mental shift". A worldview persuades economic and political actors to accept a definition of the situation so that the state gains control over the outcomes. How a national problem is defined determines the nature of the solution.[106] Hence, intellectuals or technocrats, and more recently think tanks, are significant actors in establishing NSI, actively integrating technological change in economic development discourse. Mark Beeson notes that political economic visions not only inform about "what appropriate policy looks like, but what an economy is, the way it should be thought of, and the purposes to which it should be put."[107] What policymakers envision of an economy and its purpose will "both reflect and *help to construct* the very economic processes and forms policymakers and theoreticians seek to comprehend and manage."[108] Whether a national economy is self-regulating or managed is a national vision that is contested by rival power blocs, i.e. nationalist and globalist.

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[103] Ibid., p. xxvi.

[104] See, for example, Amiya Kumar Bagchi, 'The past and the future of the developmental state', *Journal of World-Systems Research* 11 (2), Summer/Fall 2000, pp. 398-442; Ha-Joon Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem Press, 2002.

[105] Bai Gao, *Economic Ideology and Japanese Industrial Policy*. Cambridge, UK: Cambridge University Press, 1997.

[106] Ibid., p. 14. Gao argues that the Japanese "economics of industrialization" sees the establishment of national production (and innovation) system as the most important policy to establish a strong and globally competitive industry. This emphasis on production actually founded on the following solid principles of

It is the belief-system in a government that is biased towards production, focused on creating innovative production and service sectors that is of significance in the establishment of NSI because belief-systems shape the way the rulers think about how things are to be done. A modern state requires three conditions: (1) an ideology that embraces a universe of assumptions, values, and expectations centred on production, technological competency, and innovative culture as the means to build a strong national economy; (2) the dominance of a capitalist mode of production; and 3) the ability of an historic bloc to harness this belief-system as a moving force toward national development.

A developmental vision serves as the glue that integrates the actions of politicians, businessmen, educators, and the general public with their perception and understanding of the national economy. As Freeman emphasizes, the integration and

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economic management: (1) building an optimal industrial structure (*sangyō kōzō*); (2) restraining excessive competition (*kado kyōsō*); and (3) trading companies' short-term profits for labor's cooperation in promoting productivity (*seisansei*).

[107] Beeson, *Regionalism and Globalization*, p. 144.

[108] Ibid., p. 145.

coherence of a society's institutional elements provides a supporting overall structure for rapid diffusion of core leading technologies in clusters of industries.[109] The ability of the state to promote technological and industrial development largely depends upon its relationship with purveyors of technological, political and social power at the national and international levels. This relationship is characteristically of a 'conflict-cooperation' type. The state is involved in 'games at two levels' – domestic and global – with each game having its own set of rules. At the domestic level, the state is involved in a political game to provide a secured and high standard of living for its people, but at another level, the international, the state is involved in another game that has its own rules favouring market forces.

Developmentalism (or mercantilism) as originally advanced by List argues that nations must modify their system according to the measure or progress they have achieved. Free trade with the more advanced nations introduces to a national economy the impetus to move from barbarism into making advances in agriculture, after which restrictions on commercial activity must be imposed to promote the growth of manufactures, fisheries, navigation, and foreign trade. After a certain level of wealth and power has been achieved, free trade and unrestricted competition must be established. Essentially, the goal of mercantilism was to align private and public vested interests to establish increasing return industries (production and service) that create virtuous circles of development by creating wealth, employment, and obtaining synergies between agriculture and manufacturing. When developmentalism is successfully carried out, the natural consequence is economic liberalism.[110] As Reinert argues, production-focused mercantilist policies have been "a mandatory passage point for nations that have taken the step from poor to wealthy." The problem, he says, is that since the early times, when the economy is in trouble monetarists try to cure the symptoms evident in the financial sphere rather than in industry. Historically, the vicious problems of poverty and low productivity and economic growth were only solved by attacking the problem at the root – changing the productive structure or by "getting the economic activities right."

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[109] Freeman, 'Continental, national', pp. 191-211.
[110] Reinert, *How Rich Countries Got Rich*, pp. 271-299.

The situation, however, is more complicated in countries that had colonial experiences, and thus "multiple spaces of development knowledges",[111] and I would say 'multiple nationalisms' as a condition of movement over-determined by global forces enacted at a local level. Colonialism, which was motivated by what Amitav Ghosh refers to as the "unquenchable, demonic thirst" of colonial powers for the control of trade, land and resources complicated the nature, terms and ground of allegiance, and imaginations of the political possibilities of local colonized élites.[112] Colonialism compromised nationalism and the notions of 'home', 'nation', and 'belonging', especially among the cosmopolitan indigenous élite which does not necessarily bear nationalist sentiment, as Smith points out. [113] In this situation, nationalism as "the foundation of the moral order of modern society, the source of its values, the framework of its characteristic – national identity, and the basis of social integration in it" is effectively compromised. Nationalism becomes élitist rather than collectivist in its goals.

Some scholars argue that "there are similarities between colonialism and post-colonialism" despite the temporal break associated with postwar independence and decolonization. Franz Fanon's "useless native class" as oppressors of their own people merely replaced the colonial masters.[114] Amity Doolittle points out that postcolonial ruling élites merely "legitimated" and "authorized" colonial rule:

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[111] Marcus Power, Giles Mohan and Claire Mercer, 'Postcolonial geographies of development: Introduction', *Singapore Journal of Tropical Geography* 27, 2006, p. 232.

[112] Amitav Ghosh, *In an Antique Land: History in the Guise of a Traveller's Tale*. New York: Vintage, 1992, p. 288.

[113] Smith, *Nationalism and Modernism*, p. 24.

> ...the colonial and postcolonial states share the following characteristics: 1) they control access to resources through legal institutions that privilege private property law over customary practices; 2) they invent discourses that justify centralized rule while obfuscating the realities of those who live on the margins and whose lives depend directly on natural resources that privileges elite concerns over local concerns and subsistence uses; 3) they blame rural people for resource degradation while overlooking legal, political and economic structures that influence how rural people use resources; and 4) both the colonial and postcolonial states make it difficult for marginal people to define their interests in their own terms.[115]

In the postcolonial period, Doolittle argues, "particular images of modernity, development, resource use, and nationalism are associated with progress and global incorporation." Progress or modernity is associated with the West, with science and technology, and with economic rationality while tradition or culture is associated with backwardness, stagnation, disorder and superstition. It was in this dichotomous context that modernization theories of development in the 1950s and 1960s emphasized policies on the need to change how people act, think, and live, pulling them away from 'traditional' practices and make them embrace modern or Western culture.[116]

Sarah Radcliffe and Nina Laurie have argued that for many years after modernization, culture was sidelined in mainstream development discourse because of its colonial legacy.[117] However, in recent years, culture has been given a positive image and is now "a significant" and "acknowledged" facet of development thinking as issues of social cohesion come to the fore. In neoliberal development studies, culture is associated with notions of "social capital – referring to embedded meaningful forms of social organization" and in the present development parlance, "culturally appropriate development."

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[114] Frantz Fanon, *The Wretched of the Earth*, Preface by Jean Paul Sartre, Translated by Constance Farrington. New York: Grove Press, 1968 c. 1963.

[115] Amity A. Doolittle, 'Powerful persuasions: the language of property and politics in Sabah, Malaysia (North Borneo), 1881-1996', *Modern Asian Studies* 38 (4), 2004, p. 821-2.

[116] Susanne Schech and Jane Haggis, *Culture and Development: A Critical Introduction*. Malden, MA: Blackwell Publishers, 2000, pp. 11, 33.

[117] Sarah Radcliffe and Nina Laurie, 'Culture and development: taking culture seriously in development for Andean indigenous people', *Environment and Planning D: Society and Space* 24, 2006, p. 233-235.

Outside of mainstream development thinking, "postdevelopment" approaches take culture – its languages and practices of development- as an object of deconstruction. It argues that neoliberal development with its management ethos and scientific techniques is a re-imposition of Western notions of modernity, progress, and knowledge upon distinct belief systems and cultures. Consequently, postdevelopment scholars counter-pose the local or popular non-Western cultures and domains of knowledge. In the words of Arturo Escobar, "The greatest political promise of minority cultures is their potential for resisting and subverting the axiomatic of capitalism and modernity in their hegemonic form."[118]

Radcliffe and Laurie argue that "despite widespread influence on development thinking, postdevelopment provides a misplaced postsructuralist framework for appropriating issues of culture in development." One of the key limitations of postdevelopment approach, they argue, is the tendency to "overgeneralize about the pernicious effects of Western development, contrasting the evil North and the noble South" and "dichotomizing the cultural options as either Westernization or local cultures." In effect, postdevelopment scholars tend to reduce the complex histories of development. Another limitation of postdevelopmentalism, Radcliffe and Laurie point out, is the tendency to downplay "the role of nationalism in development programs, and the global arena of action which development spans." They write:

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[118] Arturo Escobar, 'Imagining an postdevelopment era', in Jonathan Crush (ed.) *Power of Development*. London: Routledge, 1995b, p. 225.

> Postdevelopment reduces development to a monolithic Western construct, thereby overlooking how it "is indigenized by different localities". In contrast to postdedevelopment, we can recognize the dialectic and iterative relationship of nationalism with shifting development agendas, narratives, and projects. Development modernities combined with invented tradition and identities create a hybrid national development trajectory, resulting in diverse development – cultural connotations and content. Postcolonial national imaginaries are often intricately bound up with development, whereby national self-realization is to be achieved through development success.[119]

Radcliffe and Laurie reiterate that "development can be considered in a globalized field of multiple meanings, practices, and cultures, where cultural difference is not an alternative *to* development but informs the contested relations upon which development is built and policy prescriptions are devised."[120] In this study, notions of culture and development follow Racliffe and Laurie – "cultures as multiple and development as a set of culturally embedded practices and meanings."[121] Nowhere is a dichotomized framework less helpful than in analyzing East Asia where context-specific development thinking about culture is intertwined with a globalizing world and global-national inflections of development. Moreover, questions about culture and development must be concerned with politics and economics and consider how discourse itself is intensely material.

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[119] Radcliffe and Laurie, 'Culture and development', p. 235.
[120] Ibid.
[121] It is here recognized that fixed definitions of cultures is difficult to achieve. However, it provides working definition. Williams defines culture as "a constitutive social process, creating specific and different ways of life...with an emphasis on a material process" (p.19). He also attributes it to structures of feelings, namely "meanings and values as they are actively lived and felt" (p. 133). See Raymond Williams, *Marxism and Literature*. Oxford: Oxford University Press, 1977. Radcliffe and Laurie, then, argue for the need "to combine an understanding of contested meanings (élite versus popular culture) with material culture (which embodies socioeconomic organization (such as kinship or religion)." (p. 232).

The intellectual climate in today's global world, as it was during List's time, has rendered 'market mechanism' the 'new gospel of truth' in wealth creation and 'developmental mechanism' strangely old-fashioned. The basic argument is that markets promote efficiency in the sense that individuals exercising their freedom are given the opportunity to maximize benefits by choosing from the available 'commodity' and 'capabilities' options to be able to function. Perfect market equilibrium guarantees that no one's freedom can be increased further while maintaining the freedom of everyone else. But as Amartya Sen points out "the problem of inequality...gets magnified as the attention is shifted from income inequality to the inequality in the *distribution of substantive freedom and capabilities*.[122]

Nowhere has Sen's idea of development as freedom to pursue what a nation decides had such tremendous implications than in the relationship between technological innovation capabilities and national development. Presently, indebtedness and neo-liberalism have limited Third World countries from state activism and from forcing it to adopt liberal economic regime. There is a need to balance "the role of government – and of other political and social institutions – with the functioning of markets."[123] Sen is calling "for those who have tended to take the market mechanism to be the best solution of evey economic problem…to inquire what the limits of that mechanism may be". He suggests that market mechanisms must be supplemented with other supporting institutions to empower nations to achieve their development goals.

Economic liberalism refers to the maximum role of markets and competitive forces in an economy. The legitimate role or 'order policy' of the state is limited to the establishment of the necessary framework in which markets can operate and to the provision of services which private enterprise cannot provide. These theoretically guarantee price stability, open markets, private property, liability and the freedoms of trade, association and contract through the establishment of rules to ensure predictability. Nonetheless, rulemaking is a social process, and is therefore political. International trade regimes, for example, are contested.

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[122] Amartya Sen , *Development as Freedom*. Westminster, MD: Alfred A-Knopf, 1999, pp. 117-119.
[123] Ibid., p. 126.

David Ricardo's international trade theory of comparative advantage argued that a country has a comparative advantage at producing something if it can produce it at a 'lower cost' than anyone else. But having a comparative advantage is not the same as being the best at something. In fact, a country can be completely unskilled at doing something, yet still have a comparative advantage at doing it. This is possible because the 'lower cost' referred to is actually measured in terms of 'opportunity cost' – the value of what is given up.[124] As Reinert says, "trade theory creates the possibility for a nation to achieve a 'comparative advantage' in being poor and ignorant." This happens, he explains, because Ricardian theory assumes that nations are exchanging identical labour hours regardless of any qualitative features – "a Stone Age labour hour on a par with a Silicon Valley labour hour". Ricardian theory believes that when these two economies integrate through trade, both will produce "economic harmony and equalization of wages." [125]

Reinert argues that this assumption does not take into account the fact that different economic activities are qualitatively different as carriers of wealth.[126] He explains this by using two sets of key terms: 'perfect' and 'imperfect' competition and 'increasing' and 'diminishing' returns. 'Perfect competition' means that "the producer cannot influence the price of what he produces" as the price the market is willing to pay is known and he literally reads it in newspapers. This is normally a situation found in markets for agricultural and mineral resources products. Accompanying this situation is what is called in economics 'diminishing returns', i.e. "as production is expanded, after a certain point, more units of the same input – capital and/or labour – will produce smaller and smaller amounts of new output. This is not, however, the situation in a manufacturing economy . When production is expanded production costs are reduced, thus with falling costs come increasing returns, and increasing returns produce market power, wherein to a large extent they are able to influence the price of products sold – this is called 'imperfect competition'. Reiner further points out that for many centuries technological change, increasing returns and imperfect competition were terms equated with manufacturing.

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[124] For instance, the opportunity cost of cloth production is defined as the amount of wine that must be given up in order to produce one more unit of cloth.
[125] Reinert, *How Rich Countries Got Rich*, p. 26.
[126] Ibid., pp. 5-7.

Towards the end of the 20th century, however, the information revolution has driven a noticeable structural change in the service sector. Manufacturing has not lost its role in the economy, but innovative ways of doing things have revolutionized the service sector which creates the bulk of economic activity and employment based on capabilities to 'capture', process, store, and communicate data and information. Ian Miles argues that "if services are 'problem-solvers', as is so often suggested, then they are clearly operating on the basis of some sort of knowledge of problems and solutions, and services innovation implies changes in this knowledge." Miles point out that services are seen as technology users that shape the physical innovations and develop creatively new services and new configurations of goods and services. The professional services sector, such as the organization of accountants, lawyers, etc. is increasingly seen as a major source of innovation, engaged not just in accrediting members, but also providing further training, innovation support, and discussions of best practice. As knowledge-producing and –using activities have become dispersed, not exclusively the domain of scientists and engineers, the role of the state in ensuring the institutional support for professionalism, trust, cooperation and competition is highlighted.

1.4 Summary

This chapter conceptualizes the politics of technology and economic development. It underscores the importance of endogenous growth and the role of technology in that process. NSI as an historical structure – a malleable structure of technological, economic, political and cultural forces that shape the development and effective use of productive knowledge in a national economy- was proposed. This is the first step towards the process of unpacking of the 'lack of political will' problem in the Philippines. It was argued that interaction among ideas, material interest, and visions of political leaders largely shapes development strategies.

However, there are different coalitions of historic bloc forces and actors in a society, that is, nationalist and globalist, which are competing for power to influence the direction of a nation's development. If List and Reinert are listened to, the dichotomy between developmentalism and economic liberalism is misleading, if not false. Both nationalist and globalist strategies are important in development. The problem is the logical order, that is, developmentalism must precede globalism. History shows that those who were successful in creating vibrant national economies with improved standards of living for their people followed this path of development. The situation in developing countries, mostly with colonial experiences, is that there are political, economic, and ideological structures and forces which invert this path to development. Globally-oriented actors institutionalized liberal economic strategies before developmentalism could take root.

Positing NSI as an historic bloc, the importance of a developmental mindset possessed by these forces was underscored to achieve economic development. Such a mindset engendered by a deep sense of nationalist sentiment would seek to use technological innovation as potent resource to make a nation wealthy. A modern historic bloc that displays political will for economic development embraces a universe of assumptions, values, and expectations centred on the development of a production- and service-oriented economy. Such a belief-system leads a government to deploy a development strategy that combines trade with innovation policy to successfully transform a pre-capitalist (or pre-modern) to capitalist (or modern) economy. In the main body of the dissertation, these hypotheses will be tested in the Spanish, American, and postcolonial Philippines against the backdrop of the UK, US, Japan, South Korea and Taiwan experiences.

Chapter 2 The Philippine development challenge*

> Politics and development may make uncomfortable bedfellows but they are inevitable ones. Like it or not political choices do shape development results - a truth that many in the 'professional development' world of multilateral banks and non-government aid agencies like to ignore.
>
> ***Richard Swift (1988)***

> From Renaissance Italy to the modern Far East, the development of the world's wealthy nations has been driven by a combination of government intervention, initial protectionism, and the strategically timed introduction of free trade and investments...Yet despite its demonstrable success, when it comes to development in the poorer nations, Western powers have largely ignored this approach and have taken the toughest of hard lines on the importance of free trade...When our leaders come to lecture poor countries on the right road to riches they do so in almost perfect ignorance of the real history of mass affluence.
>
> ***Jomo K. S.(2007)***

This chapter contextualizes the study's main question and the general direction of the investigation. It reviews the broad contours of scholarship on Philippine political economy, development, and science and technology (sub-section 2.1), and proceeds to show that technological innovation and productivity (or lack of it) lie behind the profound contrasts in performance between the Philippines and other developed East Asian countries (sub-section 2.2). Sub-section 2.3 challenges development policymaking in the Philippines to move beyond foreign trade and investment. The last section (sub-section 2.4) summarizes.

Poverty continues to be a central development issue in the Philippines. According to the 2006 NSCB (National Statistical Coordination Board) estimates, 27.6 million Filipinos or 4.8 million families are living below poverty line[1], and poverty has worsened between 2003 and 2006.[2] Arsenio Balisacan pointed out that even the decline in poverty rates in 1997 (before the financial crisis) did nothing to improve the country's inequitable income distribution because the poorest 20 percent improved their income by only about 5 percent for every 10 percent growth in overall per capita income.[3] This means that the poor slipped further behind and income inequality became even more extreme.

The inability of the country to build a vibrant agricultural and industrial productive economy and provide employment for a rapidly growing labor force has resulted in a policy that encourages the 'export' of contract workers. Fully 6.4 million Filipinos are working abroad, 4.7 million of these using legal channels and the rest illegal.[4] The country has a long history of 'exporting' contract workers rather than goods. The labor migration of Filipinos overseas proceeded in several waves, according to Maria

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[1] In the Philippines, "poverty threshold" or "poverty line" refers to the cost of the basic food and non-food requirements (valued in peso). It is the minimum income required to meet the food requirements and other non-food basic needs. In 2006, a Filipino family comprising of five members needed a monthly income of Php 4,177 or US$100 to sustain their family's minimum basic food needs. This amount represents an increase of 23 percent from 2003.

[2] National Statistical Coordination Board, 'Poverty worsens between 2003 and 2006', http://www.nscb.gov.ph/pressreleases/2008/PR-200803-SS2-02_pov.asp,accessed March 26, 2008. The figures represent 33 percent and 27 percent, respectively of the total population and families.

[3] Arsenio Balisacan, 'Poverty and inequality', in Arsenio Balisacan and Hal Hill (eds.) *The Philippine Economy: Development, Policies, and Challenges*. New York: Oxford University Press, 2003, p. 333.

[4] This figure was based on a UNDP (United Nations Development Programme) Human Development Report for 1998. Some unofficial estimates put the number of Filipinos working abroad as migrant workers at 8 million, about 10 percent of the nation's population and 20 percent of its labor force.

Cynthia Bautista, but it was not until the 1970s "that the Philippines exported workers in large numbers".[5]

A stop-gap policy of the Marcos regime that has become permanent has meant that the export of people has become a mainstay of the otherwise crippled Philippine economy. In 2006 Filipinos sent home US$ 11 billion to prop up a national economy that is up to its neck in debt. One powerful member of the élites managing the country, the former Central Bank Governor Rafael Buenaventura, commented that "each productive, dedicated overseas [Filipino] labourer" could be an advertising tool for foreign investors to come to the Philippines.[6] Such a statement is a callous response to the brutal social realities faced by hundreds of thousands of Filipinos who have been forced to leave their homeland in search of work.

Since the 1990s, feminization has marked the migration phenomenon with more women, many of them relatively educated, leaving the country to become housemaids, entertainers, and caregivers in rich countries. When they go abroad, they have to suffer the pain of leaving their children and family far behind, not counting the abuses and exploitation they often endure in foreign lands for the sake of their families. This tragedy of scattered Filipino families separated from each other by thousands of miles because of a faltering economy that cannot provide sufficient jobs is a 'national disaster' for which the ruling Filipino élites are accountable to the entire nation.

Filipinos in foreign lands are likened to exiles, and as such, Bautista points out, "they possess a plural vision, creating a new space for themselves both in the adopted country and in the Philippines".[7] Accordingly, a plural vision "can be both alienating and inspiring, a source of awareness and dissatisfaction, and a source of pleasure and apprehension." In circumstances of change and mobility, "a plural vision no longer permits the self the illusion of a unified, bounded or coherent whole." Being "at home and not at home" because of "the conditions of work" and "the cultural differences", Nicole Constable points out, makes Filipinos increasingly distinguish between themselves and the people they serve in other countries, and "the attitudes and actions of communities in the receiving countries" reinforce the sense of alienation, dissatisfaction and apprehension.[8]

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[5] Maria Cynthia Rose Banzon Bautista, 'Migrant workers and their environments: insights from the Filipino diaspora',n.d., http://www.unu.edu/hq/Japanese/gs-j/gs2002j/shonan18/Bautista4abstE.pdf., Accessed September 4, 2007.

[6] David Diamond, 'One nation, overseas', n.d., http://www.hirefilipino.com/OneNation /htm., accessed June 9th, 2006.

The overseas employment policy of the Philippine government has backfired in recent years because most Filipinos have sought to leave the Philippines permanently as immigrants to other countries, prompting a respected sociologist to suggest that the massive exodus of Filipinos from their homeland signals a 'rebellion' of the Filipino working class against the country's uncaring ruling élites.[9] Recently, policymakers and government officials were alarmed by a 'crisis' in the country's health sector where some 200 public hospitals had to close down and another 800 hospitals were partially closed because nurses and doctors had left the country for a better future in foreign lands.[10]

There is much talk about passing legislation requiring Filipino nurses to render a mandatory number of years of service at home to address the crisis. Lamentably, instead of creating an environment that makes Filipinos want to stay in their own country, the ruling élites think coercion is the best solution. These overseas Filipino contract workers would not have to go to foreign lands to seek work if a vibrant economy had been developed in the homeland.

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[7] Bautista, 'Migrant workers', p. 4.

[8] Nicole Constable, 'At home and not at home: Filipina narratives of ambivalent returns', in Filomeno V. Aguilar, Jr. (ed.) *Global Migrations: At Home in the World?* Quezon City: Philippine Migration Research Network and Philippine Social Science Council, 2002, p. 408.

[9] Thanks to Dr. Satoshi Ikeda for this insight.

[10] Jaime Z. Galvez Tan, 'Regulating the movement of doctors- supply and demand: the Philippines', University of the Philippines College of Medicine, http://www.iamra.com/ppt/Regulating%20the%20Movement%20of%20Doctors_Supply%20and%20Demand_The%20Philippines_Dr%20Jaime%20Galvez%20Tan.ppt, accessed November 2, 2007.

2.1 The industrial puzzle

The poor economic and industrial performance of the Philippines in comparison to other East Asian countries has puzzled many.[11] The country had been an exporter of semi-processed agricultural products (e.g. sugar) and rural-based craft goods, such as hand-woven textiles, since the 18th century. In the 1950s prospects for industrial development were higher in the Philippines than in the rest of East Asia.[12] However, the country cannot be considered to be an industrializing economy. It has failed to achieve a sustained period of rapid growth, with its economy developing in a boom-and-bust pattern.

The country is an outlier in a dynamic region of high-performing economies. It appears that despite being located in the East Asian region it is "reminiscent of a Latin American prototype economy: a dualistic structure in which a small proportion of the labour force is employed in a capital-intensive industry … while the majority of the population is employed in typically low-productivity agriculture and urban informal services".[13] In 2002, there were 3.4 million workers, or about 10 percent of the labour force, who were not gainfully employed. This employment pressure is expected to get worse over the next 14 years as 29.3 million young Filipinos presently under 15 years old [the age cut-off for definition of labour force] enter the workforce.[14]

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[11] See for example, Cristina David, 'Agriculture' in Arsenio M. Balisacan and Hal Hill (eds.) *The Philippine Economy: Development, Policies, and Challenges.* New York: Oxford University Press, 2003, pp. 175-218; Hal Hill, 'Industry', in Arsenio Balisacan and Hal Hill (eds.) *The Philippine Economy: Development, Policies, and Challenges*. New York: Oxford University Press, 2003, pp. 219-253.

[12] See, for example, Harold Crouch, *Domestic Political Structures and Regional Economic Cooperation*, Singapore: ASEAN Economic Research Unit, Institute of Southeast Asian Studies, 1984; Robert Dohner and Stephan Haggard, *The Political Feasibility of Adjustment in the Philippines*. Paris: OECD, 1994; John Power and Gerardo Sicat, *The Philippines: Industrialization and Trade Policies*. London: Oxford University Press, 1971; and Kunio Yoshihara, *Philippine Industrialization: Foreign and Domestic Capital*. Singapore and Quezon City: Oxford University Press and Ateneo de Manila University Press, 1985.

Why has the Philippines failed to industrialize and achieve a sustained path of economic progress?[15] Scholars from different disciplinary persuasions have offered various explanations. Their elucidations are not mutually exclusive and, like the pieces of a puzzle when put together, they give a realistic picture of the complex problems surrounding Philippine industrial, economic, and social stagnation. However, there is still more to be understood. I shall first examine existing explanations on which the present inquiry is building. Conventional economists locate the main cause of the Philippines' economic malaise in wrong and/or ill-timed economic and development policies.[16] Much of the blame is placed upon policies of IS pursued between the 1950s and 1980s. These scholars argue that IS was fraught with constraints which became unavoidable after the 'exuberant stage' of the strategy came to an end.

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[13] Rob Vos and Josef Yap, *The Philippine Economy: East Asia's Stray Cat?: Structure, Finance and Adjustment*. Basingstoke, UK; New York: St. Martin's Press, 1996, p 17.

[14] Gerardo Sicat, 'Reforming the Philippine labor market', Discussion Paper, School of Economics, University of the Philippines, 2004, p. 2.

[15] The term "progress" is used here in the more limited sense of direction towards advance and improvement of productive capabilities for wealth accumulation.

[16] See, for example, Romeo M. Bautista, Helen Hughes, David Lim, David Morawitz and Francisco E. Thoumi, *Capital Utilization in Manufacturing: Colombia, Israel, Malaysia and the Philippines*. New York; Toronto: Oxford University Press, 1981; Power and Sicat, *The Philippines: Industrialization and Trade Policies*; Leonardo Lanzona, 'Jobless growth, trade and globalization', Yellow Paper II, Beyond EDSA: The Post-Erap Reform Agenda, http://www.aer.ph/projects/yellow2/, n.d.; Romeo Bautista and Gwendolyn Tecson, 'International Dimensions', in Arsenio Balisacan and Hal Hill (eds.) *The Philippine Economy: Development, Policies, and Challenges*. New York: Oxford University Press, 2003, pp. 136-171.

The growth of the export sector was severely constrained because of foreign exchange controls that resulted in an acute shortage of foreign exchange in the 1950s. The protection accorded to firms (both local and foreign) through high tariffs, and the preferential access to low-interest loans from government financial institutions as they bought raw materials classified as 'essentials' from abroad, it has been argued, produced inefficient Filipino firms that have never 'grown up'. Instead, these companies racked up artificial profits because of the state's unrealistic exchange rates. Moreover, high tariff rates had encouraged assembly and packaging operations.[17] As these industries were dependent upon imported raw materials and machinery, backward integration which could have set up the next stage of industrial growth and provided jobs was prevented.

In the Philippines the failure of IS encouraged economic policy reforms in the 1980s toward export orientation and flexible exchange rates. Foreign trade and capital markets, as well, were liberalized to introduce competition in the domestic economy and to dismantle cartels and monopolies. All these reforms came with financial and technical support from the WB (World Bank) and IMF (International Monetary Fund). Nevertheless, there was no resultant dynamic manufacturing sector or rapid structural transformation of the economy, nor did an export-led approach driven by a liberalized trading regime produce a dynamic industrial sector.

Rob Vos and Josef Yap have confirmed the pivotal role of the rural sector in Philippine development.[18] They found that agriculture and light manufacturing (such as food processing and textiles) have a high level of backward linkages and integration. On this account they have recommended the establishment of policy measures such as finance and others that would strengthen and improve the linkages, allowing the rural economy to participate more fully in the growth of income, as it might have done if industrialization had been linked to a domestic raw materials base. Indeed, the enormous benefits of closely-linked agriculture and manufacturing sectors have been demonstrated by the experiences of advanced economies, from 17th-century England (Chapter 3) to 19th-century US and Japan (Chapter 4) and late 20th-century South Korea and Taiwan (Chapters 5 & 6).

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[17] Power and Sicat, *The Philippines: Industrialization and Trade Policies*, p. 62; Bautista and Tecson, 'International Dimensions', p. 138.
[18] Vos and Yap, *The Philippine Economy*, pp. 37-8.

Political economists are aware of the limitations of policy-oriented economic analysis in explaining why the IS and EP strategies had limited success in the Philippines. They look for explanations in politics and the associated patterns of policy choice and implementation. Though there is no single strand of thought in political economy, political economists agree on bringing politics and the state back to the center of development analysis. Mainstream political economists, in particular, argue that the main obstacle to development in the Philippines is the 'patrimonial oligarchic state' (one where the "powerful business class extracts privilege from a largely incoherent bureaucracy"), which encourages 'booty capitalism' in key sectors of the economy, such as banking[19] and manufacturing[20]. Having an economic base that is '*outside* the state', the crony capitalists obtain particular privileges from a largely incoherent state apparatus. Crony capitalists use political connections as a major avenue to private accumulation through monopolistic control of the domestic economy. In the Philippine context they are composed of the 'landed oligarchs' and the 'new cronies' which comprise the 'new oligarchy' in the Philippines.

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[19] See Paul Hutchcroft, *Booty Capitalism: The Politics of Banking in the Philippines*. Ithaca, NY: Cornell University Press, 1998, p. 20

[20] Temario Rivera, *Landlord and Capitalists: Class, Family, and State in Philippine Manufacturing*. Quezon City: The University of the Philippines Press, 1994.

These political economists argue that it is the monopolistic control of the oligarchs in the economy that was the main cause of the Philippine malady. Thus, aggressive liberalization and deregulation of the economy was undertaken to introduce competition. However, monopoly capitalism is inevitable, as Marxian economists would argue, because capitalist competition is 'inherently unstable'. Paul Sweezy points out that "The way to succeed in a competitive market is to cut costs and expand production, a process which requires incessant accumulation of capital in ever new technological and organization forms."[21] Quoting Marx, Sweezy wrote: "The battle of competition is fought by cheapening of commodities. The cheapness of commodities depends, *ceteris paribus*, on the productiveness of labor, and this again on the scale of production. Therefore the larger capitals beat the smaller."[22]

Monopoly capitalist history has shown us that there is a strong tendency for concentration or cartelization[23], and underlying this process is the industrial corporate research which confers large firms the ability to (1) determine the nature of the technology to be developed, (2) stifle other innovations and promote their own, and (3) shape the market.[24] Of course, industrial research is not the only determinant for technological innovation and increased productivity; there are other equally important factors, such as education and training, improvements in the quality of inputs, along with price, design, marketing, services, the quality of interactive learning, and the political, social and cultural environment (Chapter 1, pp. 37- 39).

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[21] Paul Sweezy, 'Monopoly capitalism', *Monthly Review- An Independent Socialist Magazine* 56 (5), October 2004, p. 78.
[22] Ibid.
[23] Ibid., p. 80.
[24] See Leonard Reich, *The Making of American Industrial Research: Science and Business at GE and Bell, 1876-1926*. Cambridge; New York: Cambridge University Press, 1985.

The managerial class are concerned with protecting and supporting increasingly sophisticated technology in a planned approach to maintain their control over technological change. Because of these, there would be less space for small enterprises to prosper, unless they are symbiotically linked to the large corporations (e.g. component makers for automobiles and computers). The interdependent relationship between technological accumulation and monopoly capitalism and the resulting power imbalance between large and small enterprises raise significant policy issues alongside the need to promote innovation other than industrial research. On this account, Jerry Courvisanos stresses the importance of policies that could provide more balanced development by supporting regions, industries, communities, and innovators that do not have the resources of large corporations.[25]

Policies need to be proactive and positive in encouraging diversity, in fostering a culture of innovation, and in integrating the network of institutions necessary for the development and diffusion of technology. For example, Lundvall suggests in regard to the "establishment and restructuring of user-producer relationships" wherein during periods of radical technological change, governments seek to transform those entrenched user-producer arrangements supported by vested interests, or sustain these relationships during periods of gradual technological change.[26] Moreover, most job-creating product innovation comes from R&D-intensive sectors in manufacturing, and knowledge-intensive sectors in services so that governments in developing countries should encouraged these types of activities to solve unemployment problems.[27]

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[25] Jerry Courvisanos, 'Technological innovation: Gailbraith, the post-Keynesians, and a heterodox future', *Journal of Post-Keynesian Economics* 28 (1), Fall 2005, p. 85- 90.
[26] Bengt-Ake Lundvall, 'Innovation as an interactive process: from user-producer interaction to the national system of innovation', in Giovanni Dosi et al. (eds.), *Technical Change and Economic Theory*. London: Pinter Publishers, 1988, pp. 349-369.

The emergence of service sectors in the present knowledge-based economy presents different innovation patterns among service firms, such as the classic R&D, professional service, organized strategic innovation, entrepreneurial, artisanal, and network patterns.[28] Because diffusion of innovation is a social process mediated by an array of support structures, policy considerations in the service sector, according to Ian Miles, would include the location of service firms in innovation clusters, networks and systems, and a good understanding of the firms' sets of core knowledge and types of services are fundamental in encouraging the desired interactions. Jorge Niosi (2002) argues, though, that "these interactions are not always easy and costless" because companies and other entities engaged in innovation have developed their sets of routines, and changing them would require learning new techniques and acquiring new skills which are costly. Niosi argues that public policies should also take this into consideration.[29]

Political economists from a radical perspective derive their explanations from exogenous factors. They emphasize the shaping and constraining role of foreign influence, particularly neo-colonialism, US hegemony, the Bretton Woods institutions, and foreign capital. Dependency scholars have argued that since 1898 the Philippines has been a 'colonial dependent country', and that although formal independence was granted after World War II, American domination continued through the workings of international development organizations such as the WB and IMF.

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[27] Charles Edquist, Leif Hommen and Maureen McKelvey, *Innovation and Employment: Process versus Product Innovation*. Cheltenham: Edward Elgar, 2001 (see Chapters 3&4).
[28] Ian Miles, 'Services and the knowledge-based economy', *Service Innovation: Organizational Responses to Technological Opportunities and Market Imperatives*. London: Imperial College Press, 2003, pp. 85-87.
[29] Jorge Niosi, 'Review- Innovation and Employment: Process versus Product Innovation', *Journal of Economics* 76 (2), June 2002, p. 194-196.

Walden Bello et al., for instance, have argued that the Philippine industries (the periphery) have been relegated to labour-intensive production activities while the American transnationals (the core) have enjoyed a monopoly of skill-intensive and technology-intensive production processes.[30] This does not bode well, since a viable domestic industrialization, according to Alice Amsden and Kunio Yoshihara, requires domestic or national capital as its major agent, as shown by the examples of Taiwan and South Korea.[31] Amsden points out that the agent of industrialization in South Korea is the diversified home-grown business groups named *chaebol*. In Taiwan most large corporations were owned by the government and the SMEs are home-grown as well.

Meanwhile, Giovanni Arrighi, Satoshi Ikeda and Alex Irwan, from a world-systems perspective, explained the 'Asian economic miracles' as driven by the expansion of the Japanese multi-layered sub-contracting system from the 1960s through the 1980s.[32] In this view, the economic underdevelopment of the Philippines is due to the fact that, unlike the high-performing Asian economies, the Philippines failed to 'ride on' with the unique 'systemic circumstances' underpinned by the heavy concentration of Japanese investments in those countries.

The Philippines was bypassed in the massive outflow of Japanese capital to its neighbours in Asia in search of competitive production locations triggered by the Plaza

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[30] Walden Bello, David Kinley, and Elaine Elinson, *Development Debacle: The World Bank in the Philippines*. Oakland, CA: Institute for Food and Development Policy, 1982, p. 153.
[31] Alice Amsden, *Asia's Next Giant: South Korea and Late Industrialization*. New York: Oxford University Press, 1989, p. 21; Yoshihara, *Philippine Industrialization*, pp. 2-4.
[32] Giovanni Arrighi, Satoshi Ikeda and Alex Irwan, 'The rise of East Asia: one miracle or many?', in R. A. Palat (ed.), *Pacific Asia and the Future of the World-System*. Westport, CT: Greenwood Press, 1993, pp. 41-65.

Accord.[33] Bello points out that with the US$ 15 billion of Japanese investments which flowed to Southeast Asia between 1987 and 1991, the Philippines' meager share was only US$ 797 million, whereas Thailand received US$ 12 billion. This prompted him to conclude that "…what spelled the difference between the Philippines and its neighbors…is Japanese capital."[34]

A focus on the role of government or the state in technological development is one common thread that connects some studies of the role of S&T in Philippine industrialization and development. Olivia Caoili examined the changes in structures, processes, and directions for S&T policymaking in the Philippines.[35] She tries to make a case that through the years the government's commitment to the development of S&T as part of the overall strategy for national development has been demonstrated by a series of institutional arrangements and re-organizations since 1905 in order to push "the formulation of S&T policy to the forefront of national government concern." From being the principal government research establishment launched in 1905, i.e. the Bureau of Science, the institution evolved into a regular department in 1987.

The DOST (Department of Science and Technology), headed by a cabinet secretary, was "made part of Cabinet policymaking priorities", Caoili points out. The DOST was mandated "to provide central direction, leadership and coordination of scientific and technological efforts" and "to formulate and implement policies, plans, programs and projects" for the development and promotion of S&T in both public and private sectors. For Caoili, then, proof of the government's commitment to S&T development is an evolving institutional or organizational presence.

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[33] The agreement was reached in September 1985 when other members of the G-5 countries successfully pressured Japan, enjoying trade surpluses, to raise the value of its yen to a record high of 153 yen to the dollar in order to reduce the huge trade imbalance between Japan and the US.

[34] Walden Bello, 'The tragic consequences of doctrinaire economics', *Philippine Daily Inquirer*, http://www/inQ7.net, January 1, 2004 (part 2), p. 2).

[35] Olivia Caoili, 'Policymaking for science and technology in the Philippines: changing structures, processes and directions', Professorial Chair Paper Series, no. 96-15. Quezon City: College of Social Sciences and Philosophy, University of the Philippines, 1991.

Yet she admits that "government support for science and technology still falls very much short of the ideal."[36] In almost all of the previous accounts, the failure of industrial strategy has been primarily attributed to such problems as lack of government support for S&T, underinvestment in R&D, inadequacy in the supply of scientific and technological manpower resources, and bureaucratic rigidities in public R&D organizations.[37]

Using the NSI concept, Sunil Mani has also focused on the role of government in hastening technological development. Like many other Filipino scholars[38], Mani observed that the Philippines does not lack clearly laid-out S&T plans, policies and programs that should have strengthened the country's capability to acquire, learn, adapt and improve on technologies.[39] These scholars' analyses of the institutional and policy framework for S&T show that the Philippines shares many similarities with South Korea and other countries in the region. But the big problem is that these plans are largely political rhetoric without the required huge resources to translate them into reality. For most of these scholars, then, the failure to build the country's innovation and production system is due to the government's 'lack of political will'. They all seem to agree that a 'strong state' that makes selective and forceful interventions in the market which, according to developmental state theorists, is the key to East Asian countries' success, is non-existent in the Philippines.

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[36] Ibid., p. 27.

[37] See Caoili, 'Policymaking for science and technology in the Philippines'; Virginia Cariño, 'Philippine science and technology: time for bold moves', State of the Nation Reports No. 10. Diliman, Quezon City: UP Center for Integrative and Development Studies with the University of the Philippines, 1993; Socorro Rodriguez, *Philippine Science and Technology: Economic, Political and Social Events Shaping Their Development*. Quezon City: Giraffe Books, 1996.

[38] Jose A. Magpantay, 'S&T in the Philippines: directions in the 21st century', *Philippine Review of Economics and Business* 36, 1999, pp. 365-93; Epictetus Patalinghug, 'An assessment of science and technology policies in the Philippines', *International Journal of Technology and Management* 22, 2001, pp. 599-616; Roger Posadas, 'The Philippines', in Saneh Chamarik and Susantha Goonatilake (eds.), *Technological Independence — The Asian Experience*. Japan: United Nations University Press, 1994. http://www.unu.edu/unupress/unupbooks/uu04te/uu04te0k.htm#5%20the%20philippines. Accessed 10 December 2006.

[39] Sunil Mani, 'Moving up or going back the value chain: an examination of the role of government with respect to promoting technological development in the Philippines', Discussion Paper Series, UNU-INTECH, Maastricht, The Netherlands, November 2002.

Given the relationship between the state and societal forces, the government's policies and actions certainly reflect a political will. The appropriate question then is: whose will? What generates greater insight into the problem is an understanding of how and why the 'lack of political will' came into being. Answers to this question are crucial if a productive economy to generate employment for Filipinos is to be established. In fact, finding some answer(s) to this question is the main goal of this thesis.

Moreover, in all the explanations there is an implicit assumption that the Philippine state is a modern state. I argue, however, that this transformation is incomplete. Caoili's (1991) interpretation of the creation of another bureaucratic organization, the DOST, confirms that rationalism and modernity in the Philippines are translated in the preoccupation of the rulers to create public office rather than channel bourgeois resources to make the economy productive and profitable. The Philippine bureaucracy is significantly huge. By contrast, a modern state has the tendency to have a lean bureaucracy because the state is more focused on creating a dynamic economy where the élites' energy for surplus extraction is channelled (consider, for instance, a comparison between France and England in the 17th century, as discussed in Chapter 3).

A big problem in the Philippines, as in other poor countries, is how to efficiently produce good quality and cost-competitive products so that they can participate on an equal footing in a global trading activity, and generate surplus to support a high standard of living for its people. My first task then is to show that productivity (or lack of it) measured as TFP (total factor productivity) lie behind the profound contrasts in performance between the Philippines and the other countries. **TFP is** defined as "the rate of transformation of total input into total output". Erwin Diewert and Alice Nakamura note that Griliches, in his Simon Kuznets Memorial Lecture refers to TFP as a concept that was not really new and was a reflection of "technological improvement".[40] It is quite often interpreted as "the contribution of technological progress", and in Solow's model TFP is estimated as a 'residual', after accounting for the growth of inputs.[41] I assess the industrial situation in the Philippines against the backdrop of long-term historical evidence provided by industrialized economies such as the UK, US, Japan, South Korea, and Taiwan.

2.2 The problem of low productivity

The profound contrasts between the experiences of these countries and that of the Philippines lie most notably in the: (a) high productivity levels of strategic industries in the early phase of industrialization of the present developed economies, (b) the major role of technology in the highly productive industries, and (c) the role of SMEs in that rapid growth, especially in the Asian economies. It is, however, curious why well-respected Philippine economists continue to blame protectionist policy, and instead call for further opening of the economy, and worse, the revision of the Philippine Constitution so that the rights of exploitation over land and natural resources enjoyed exclusively by Filipinos could be extended to foreign investors.[42] Mainstream Filipino economists view these as the solution to the economic woes. What is equally disturbing is the apparent lack of understanding among economic and development planners of the crucial role of technology and innovation in moving the country into rapid economic growth. In the words of Ricardo T. Gloria, former Secretary of the DOST, "many of the country's policymakers think that science and technology can be postponed."[43]

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[40] Erwin Diewert and Alice Nakamura, 'The measurement of aggregate total factor productivity growth', 2002, http://www/econ.iastate.edu/tesfatsi/TFPMeasure.DiewertHandbook.pdf.

[41] M. Kalirajan, M.B. Obwona and S. Zhao, 'A decomposition of total factor productivity growth: the case of Chinese agricultural growth before and after reforms', *Journal of American Agricultural Economics* 78 (2), 1996, 331-338.

The expansion of exports brought about by industries that rely heavily on cheap labor does not guarantee an improved standard of living for people, which is the ultimate development goal of any nation-state.[44] A high standard of living is one result of the improved productivity of a nation's labor and capital resources. Productivity also creates a larger national income tax base to pay for public or social services, which again improve the standards of health and safety, equal opportunity, and environment impact. An economy may be competitive based on lower labour costs, but this does not translate into high standard of living. As Erik Reinert (2007) argues, "qualitative differences between economic activities" translate as "quantifiable differences in income". For instance, he says, "Regardless of the level of education of a person washing dishes in a restaurant, his or her wage level will never rise to the level of a high-tech engineer's."

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[42] See Gerardo Sicat, 'Philippine economic nationalism', Discussion Paper No. 0201, University of the Philippines- School of Economics, January, 2002.
[43] Personal interview with Dr. Ricardo T. Gloria, former Secretary of the Department of Science and Technology, in Los Baños, Laguna, Philippines, April 2005.
[44] Michael Porter, *The Competitive Advantage of Nations*. New York: Free Press, 1990, p. 8.

This is not captured in abstract models that do not "distinguish qualitatively between economic activities."[45]

Addressing the root of the problem of low TFP Michael Alba blamed corruption in government instead of advocating for technological innovation capability building. Alba's study indicates that the Philippines

> …must exhibit a high growth rate over a long period of time by persistently pushing out the steady-state level of output per worker… not so much by achieving a higher saving rate, a lower population growth, and a higher quality workforce, although these will help because of synergistic effects, but by significantly improving its TFP.[46]

I do not deny that corruption or rent-seeking, past and present, has had much to do with the lamentable state of the Philippines. But it does not constitute the primary or ultimate reason for the country's intractable poverty, as many scholars and observers would want us to believe. Rent-seeking defined as "activities which seek to create, maintain, or change the rights and institutions on which particular rents are based" is by no means alien to the long history of politics and business relationships, for instance, in South Korea.[47] But why is Korea moving forward economically, and not the Philippines? Clearly, the difference is not in the relationship between state and business, but which segment of the business group and how this relationship has been deployed to develop a strategy that improves productivity of local businesses.

A close link between technological change and industrial or economic growth is demonstrated in a large body of scholarship on NSI (Chapter 1). I argue that the underdeveloped agriculture and manufacturing sectors, and low productivity because of the lack of technological and innovative capabilities are at the root of the problems of jobless growth in the Philippines. To make my case, I use long-term historical evidence of the role of technological innovation and high productivity in the UK and the US, and then turn to the East Asian industrialized economies of Japan, Taiwan, and South Korea. This is contrasted with low productivity in the Philippines.

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[45] Erik Reinert, *How Rich Countries Got Rich...and Why Poor Countries Stay Poor.* New York: Carroll and Graf Publishers, 2007, p. 28.
[46] Michael M. Alba, 'Why has the Philippines remained a poor country? Some perspectives from growth economics', 2007, http://www.econ.upd.edu.ph/respub/dp/pdf/DP2007-01.pdf, Accessed September 4, 2007.
[47] David Kang, *Crony Capitalism: Corruption and Development in South Korea and the Philippines.* Cambridge; New York: Cambridge University Press, 2002.

Many economists and historians have pointed to the crucial role of a few key industries and technologies in the process of industrialization and economic growth.[48] These have been designated in the recent literature as 'strategic industries' underpinned by the so-called 'key factor' – cotton and iron in the first industrial revolution, coal and steam power in the Victorian boom of the 19th century. Later, steel and electricity, oil and synthetic materials supported the age of mass production and postwar boom, and microelectronics in today's age of information and communication.[49]

The surge in the growth of outputs in cotton textile manufacture and later in the iron industries, particularly its impact in railway transportation, was key to the high level of TFP in Britain in comparison with the US (Table 1-1). Stephen Broadberry points out that the US was able to gain TFP advantage over Britain only between the world wars. The US was still catching up in terms of aggregate TFP levels so that 19th-century Britain was still leading in strategic industries such as textile and iron industries.[50] In particular, the series of innovations leading to improvements in process technology for cotton manufacturing provided time-saving advantages that resulted in high productivity.[51] This phenomenon was unprecedented in human history. Whereas in the 18th century the best East Indian hand spinner would require 50,000 operative hours to process 100 lb of material cotton, only 300 hours were required in English cotton industry using a powered mule.[52] The shift from cottage to factory production during this period changed the landscape of capitalist production in terms of the introduction of machines and production organization.

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[48] See Richard Nelson, 'Policy implications of Japan's growing technological capabilities: framing the issues', in Thomas S. Arrison, C. Fred Bergsten, Edward M. Graham and Martha Caldwell Harris (eds.) *Japan's Growing Technological Capability: Implications for the U.S. Economy*. Washington, D.C.: National Academy Press, 1992, pp. 209-15; David Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*. London: Cambridge University Press, 1969.

[49] Chris Freeman and Luc Soete, *The Economics of Industrial Innovation*, Third Edition. Cambridge, MA:MIT Press, 1997, p. 19.

Table 1-1
Comparative US/UK total factor productivity levels by sector (UK=100)

	1869/71	1879/81	1889/91	1899/01	1909/11	1919/20	1937	1950	1960	1979	1990
Agriculture	99.7	115.5	123.1	126.8	118.8	134.9	125.1	136.7	145.5	144.1	136.9
Mineral extraction	89.8	78.7	82.7	104.7	113.5	147.5	167.0	246.2	378.1	150.1	134.1
Manufacturing	193.7	180.3	180.3	177.5	180.5	183.2	188.8	249.8	227.1	202.3	175.2
Utilities	73.3	79.3	99.6	101.1	126.5	230.1	292.1	406.7	509.6	424.7	320.9
Transport/Comm				180.2	180.5	208.5	228.2	290.3	274.4	282.7	247.9
Distribution							139.9	154.5	167.3	204.2	225.9
GDP	91.9	92.5	84.7	90.2	95.2	105.9	106.0	133.0	134.2	131.4	121.4

Source: Broadberry (1998, p. 398)

Technology and corporate organization largely contributed to the ability of the US to overtake Britain.[53] Stainless steel, which is used in a wide array of industries such as textile machinery, railroad, construction, and consumer goods, is produced from iron ore. However, there was only limited use of iron until technologies based on knowledge of chemistry helped manufacturers in the selection of raw material sources. Moreover, major advances in the steel industry were realized, including the use of Bessemer electric furnaces combined with scaled-up production. Andrew Carnegie's delight in the benefits derived from the chemical assays performed by his first trained chemist was apparent when he said:

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[50] Stephen Broadberry, 'How did the United States and Germany overtake Britain? A sectoral analysis of comparative productivity levels, 1870-1990', *The Journal of Economic History* 58 (2), June 1998, pp. 375-407.

[51] Freeman and Soete, *The Economics of Industrial Innovation*, pp. 3, 19, 38.

[52] Chris Freeman and Francisco Louçã, *As Time Goes By: From the Industrial Revolutions to the Information Revolution*. Oxford; New York: Oxford University Press, 2001.

[53] Broadberry, 'How did the United States', p. 399.

> We found…a learned German, Dr. Fricke, and great secrets did the doctor open to us. [Ore] from mines that had a high reputation was now found to contain ten, fifteen, and even twenty percent less iron than it had been credited with. Mines that hitherto had a poor reputation we found to be now yielding superior ore. The good was bad and the bad was good, and everything was topsy-turvy. Nine-tenths of all the uncertainties of pig iron making were dispelled under the burning sun of chemical knowledge. What fools we had been! But then there was this consolation we were not as great fools as our competitors…Years after we had taken chemistry to guide us [they] said they could not afford to employ a chemist. Had they known the truth then, they would have known they could not afford to be without one.[54]

The enormous productivity of steel, chemical and oil industries, which supported the rapidly expanding domestic economies of the US and Germany, enabled these two countries to forge ahead of Britain at the close of the 19th century. When Germany became embroiled in the First World War, the US became the world leader in terms of productivity, income level, and technology by the turn of the 20th century. At this time when mass production industries were rapidly expanding, high-tech industries, particularly electronics, were also emerging in the US.

Behind the phenomenal lead of American firms over their competitors were interlinked clusters of technology and innovations in oil and steel technologies which crystallized around 1910 and reached maturity in the 1960s and 1970s combined with scaled-up production.[55] Within a 50-year period steel and iron exports grew from 6 percent to almost 38 percent of total US exports in 1929; the steel, oil, and automobile industries accounted for more than half of the total US exports and a high proportion of total production.[56]

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[54] David Mowery and Nathan Rosenberg, *Technology and the Pursuit of Economic Growth.* Cambridge: Cambridge University Press, 1989, p. 30

At this point in the cycle of US industrialization, non-reproducible natural resources were the main exports. However, the country's economic prosperity was not due to factor endowment alone because the exploitation of these abundant natural resources was itself an outgrowth of America's technological progress.[57] For example, in the case of oil refining the batch process was replaced with flow-process technology. The advantages created by improved flow-process technology impacted not only labor costs, but also capital, energy, and raw materials (Table 1-2). The flow process had increased production from 90 barrels per stream-day (approximately 7.5 barrels per metric ton) before 1914 to 36,000 barrels per stream-day in the 1950s.[58]

Table 1-2
Productivity comparison of the Burton and fluid catalytic cracking process

	Inputs per 100 gallons of gasoline produced		
Production inputs	***Burton process***	***Fluid process original installations***	***Fluid process later installations***
Raw materials (gallons)	**396.0**	**238.0**	**170.0**
Capital ($, 1939 prices)	**3.6**	**0.82**	**0.52**
Process labour (man hours)	**1.61**	**0.09**	**0.02**
Energy (millions of BTUs)	**8.4**	**3.2**	**1.1**

Source: Freeman and Soete (1997, p. 86)

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[55] Carlota Perez, 'Technological change and opportunities for development as a moving target', Paper presented at the High-Level Round Table on Trade and Development: Directions for the Twenty-First Century, UNCTAD X, Bangkok, Thailand, February, 1999.

[56] Gavin Wright, 'The origins of American industrial success, 1879-1940', in Robert Whaples and Dianne C. Betts (eds.) *Historical Perspectives on the American Economy: Selected Readings*. Cambridge, England and New York, US: Cambridge University Press, 1995, p. 470.

[57] Ibid.

[58] Freeman and Soete, *The Economics of Industrial Innovation*, p. 86.

The second component was the emerging new high-tech industries such as electronics and new materials. It must be emphasized that these new industries in the US were distinct from those that supported the British industrial revolution. At this time, the scientific content of new product ideas was higher and more sophisticated than before. From this time on, industrialization progressed far faster, and part of the reason was the advancement of science. However, this development in the emerging high-tech industries in the US led to worker segmentation. As in-house research laboratories became prominent among corporate firms in the new industries, a core of highly skilled knowledge workers who are established and secure in their careers was created.

This development has been also linked to a major change in the American university system where science and engineering education was given more emphasis. As in-house industrial research closely followed the development of research in universities, "a complex web of connections linked the two kinds of research, including personnel, ideas, and financial as well as political support".[59] A research and development system that is "the heart of whole complex" was thus created. This was a crucial contributing factor to the competitiveness of American industries because research and development systems are responsible for "a large proportion of the new and improved materials, products, processes and systems, which are the ultimate source of economic advance".[60]

Technological learning was critical to increased industrialization in Britain in the 18th century, for Germany and the US in the 19th century, and for Japan in the 20th century.[61] When Japan began its 'catch-up' strategy from the Meiji Restoration of 1868, technological learning was promoted aggressively at the enterprise level through reverse engineering, and was intensified in the post-World War II era through corporate research and development.[62] The high levels of research and development expenditures in Japanese manufacturing are very much correlated to TFP and export performance of fast growing industries.[63] This is not to say that increased productivity is determined mainly by industrial research, because there are other factors to consider, such as education and training (Chapter 1). In fact, significant improvements in the quality of inputs, along with price, design, and services constitute a major role in total productivity.[64]

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[59] Mowery and Rosenberg, *Technology and the Pursuit'*, p. 109.
[60] Freeman and Soete, *The Economics of Industrial Innovation*, p. 5; Mowery and Rosenberg, *Technology and the Pursuit of Economic Growth*, p. 109.

Employing a research and development strategy that approaches the entire production process in an integrated way, Japanese manufacturing focused on cost-cutting innovations, such as the elimination of practices that wasted both time and resources, and the removal of production defects through quality controls at every stage of the production process. The effectiveness of the Japanese manufacturing system is shown in Table 1-3 wherein a reduction in labor, material, and capital costs is clearly shown.

The reason why Japanese companies lost their edge in the 1990s is because their competence in production engineering was not suited to industries where new products are derived from scientific breakthroughs in frontier science. The approach is appropriate for high-tech sectors such as automobiles and electronics where high productivity and quality may come from the accumulation of ordinal problem-solving efforts.[65] But this is not effective in the software, internet, biotechnology, and other high-growth industries that dominated and fuelled the recovery of the US economy in the 1990s.[66] But a Japanese come-back may occur in solar cell technology where they are well into the development of the technology now and squarely focused on driving down costs and lowering defects through continuous innovation.[67]

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[61] Amsden, *Asia's Next Giant*, p. 4; Ha-Joon Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem Press, 2002, 19-24.

[62] Freeman and Soete, *The Economics of Industrial Innovation*, pp. 148-157.

[63] Masaru Yoshitomi, 'Macroeconomic and Schumpeterian features of Japanese innovations in the 1980s', in Thomas S. Arrison, C. Fred Bergsten, Edward M. Graham and Martha Caldwell Harris (eds.) *Japan's Growing Technological Capability: Implications for the U.S. Economy*. Washington, D.C.: National Academy Press, 1992, p. 99.

[64] Shigetaka Seki, 'What can we learn from technology assessment?', Thomas S. Arrison, C. Fred Bergsten, Edward M. Graham and Martha Caldwell Harris (eds.) *Japan's Growing Technological Capability: Implications for the U.S. Economy*. Washington, D.C.: National Academy Press, 1992, p. 43.

Table 1-3
General Motors Framingham assembly plant versus Toyota Takaoka assembly plant, 1986.

	GM Framingham	Toyota Takaoka
Gross assembly hours per car	40.7	18.0
Adjusted assembly hours per car	31.0	16.0
Assembly defects per 100 cars	130.0	45.0
Assembly space per car	8.1	4.8
Inventories of parts (average)	2 weeks	2 hours

Source: Freeman and Soete (1997, p.153)
Notes:

- Gross assembly hours per car are calculated by dividing total hours of effort in the plant by the total number of cars produced.
- Adjusted assembly hours per car incorporates the adjustments in standard activities and product attributes.
- Defects per car were estimated from the J.D. Power Initial Quality Survey for 1987.
- Assembly space per car is square feet per vehicle per year, corrected for vehicle size.
- Inventories are a rough average for major parts.

In a similar example, productivity was behind Taiwan's industrial success early on in the process. An 'unexplained' output growth played a prominent role from 1953 to 1962, accounting for 65 percent of total growth in GDP. The unexplained growth was largely due to technological and institutional change.[68] Today SMEs with less than 200 employees, which are at the forefront of industrial growth and economic development in Taiwan, conduct in-house research and development activities. It has been reported that 45 percent of the 1.02 million SMEs have been engaged in in-house research, with another 18 percent planning such research within the next three years.[69] And a higher proportion of the larger firms, 76 percent, are already conducting in-house research. SMEs represent about 98 percent of the total number of firms in Taiwan, employing 78 percent of the total labour force. Of the total number of employed workers, the share held by manufacturing SMEs stands at 29 percent, or more than 2 million workers.

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[65] Ibid., pp 45-6.

[66] However, de Long points out that the recovery of the US economy in the 1990s was a "jobless recovery". Production and sales improved in March 1991 and the recession in March 2001 was "one of the shortest and the shallowest ever" so that there was a small decline in gross domestic product. But the unemployment rates continued to rise peaking at 7.6 percent in June 1992: "this is one of the worst, if not *the* worst, recession since the Great Depression with 2.1 million fewer people are at work in the US today". J. Bradford de Long, 'Is the US economy still in recession? *Project Syndicate*, April 2003, http://www.project-syndicate.org/commentary/delong10.

[67] The Economist, 'The future of Japanese business: competing through innovation'. Special Report, 377 (8457), 17 December 2005, p. 75-83.

Unlike Taiwan, the South Korean industrial structure is primarily dominated by conglomerates – the *chaebols* – because the Korean government "intentionally created" them as instrument to bring about the economy of scale in mature technologies and in turn to develop 'strategic industries' and to lead exports and economy.[70] The growing economic power and abuses of the *chaebols* led the Korean government to adopt a policy of "economic democratization" whereby development of technology-based SMEs was promoted.[71] A more cooperative relationship between the large *chaebols* and SMEs has also been encouraged by the Korean government. Today, Korean SMEs presently play a vital role in creating jobs, increasing income, and contributing to the rapid growth of the national economy. In terms of employment, production, value-added, and exports, SMEs account for 69 percent, 46 percent, 47 percent, and 42 percent, respectively. As of 1997, there were about 2.64 million SMEs with 9.1 million employees.[72]

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[68] Samuel Pao-San Ho, *Economic Development of Taiwan*, 1860-1970. New haven, CT and London: Yale University Press, 1971, p. 126.

[69] Chung-Hua Institution for Economic Research, *White Paper on Small and Medium Enterprises in Taiwan: 1998*. Taipei: Small and Medium Enterprise Administration, Ministry of Economic Affairs, 1998, pp. 34-5.

[70] Linsu Kim and Carl Dahlman, 'Technology policy for industrialization: an integrative framework and Korea's experience', *Research Policy* 21 (5), October 1992, p. 442; Byung-Nak Song, *The Rise of the Korean Economy*, Second Edition. Oxford: Oxford University Press, 1997, 111-13.

[71] Linsu Kim, 'Entrepreneurship and innovation in a rapidly developing country', *Journal of Development Planning* 18, 1988, pp. 183-194.

High productivity among Korean companies has been associated with increasing technological innovation capabilities which, according to Linsu Kim, followed three stages - implementation, assimilation, and improvement.[73] Alice Amsden points out that labour productivity in South Korea's manufacturing sector was at double digits consistently between 1965 and 1984 (Table 1-4). Because productivity was rising fairly fast, wages also began to increase more in line with unit labor costs. In fact, during the 1970s the wage increase in South Korea grew faster than in those countries that industrialized earlier. Amsden points out that although it took 70 years for English workers to achieve a 150 percent increase in their real earnings, the South Koreans did far better, with a 238 percent increase in only about a decade.

South Korea and Taiwan are a remarkable contrast to the virtual absence of SMEs in the Philippines given that SMEs are of strategic importance in more broad-based economic development. SMEs are perceived to have enhanced roles for forward and backward linkages in economically diverse sectors. They also absorb labour as SMEs employ more workers per unit of capital compared to large enterprises, thereby contributing towards a more equitable income distribution and poverty alleviation. In the Philippines, as of 1996, the biggest employers were micro-enterprises, those small-scale unorganized household firms employing 62 percent of the sectoral labour forces but contributing only 13 percent of the output. While a few large corporations generate close to 80 percent of sectoral value-added, they only provide 29 percent of employment.[74] As of 2002, there were 494,971 micro-enterprises in the country, but only 20 percent were engaged in manufacturing activities.[75]

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[72] Youn Jai Lee, 'The role and experience of SMEs in South Korea', in MB Abdullah, MIB Baker (eds.) *Small and Medium Enterprises in Asian Pacific Countries, volume I: Roles and Issues*. Huntington, NY: Nova Science Publishers, 2000, pp. 39-41. In South Korea, SMEs employ fewer than 300 people. However, there is an exception to this rule, even if it satisfies the abovementioned criteria, a firm cannot be classified as an SME if it is under the control of 30 conglomerates specified by the Fair Trade Commission based on the Act on Anti-Trust and Fair Trade Competition. .

[73] Linsu Kim, 'Stages of development of industrial technology in a developing country: a model', *Research Policy* 9 (3), July 1980, pp. 254-277.

Table 1-4
Percent growth rates of output and TFP by size of firm for manufacturing sector, 1967-1979

No of workers	Output	Labour productivity	Capital productivity	Total factor productivity	Percent of value-added (1976)
5-9	11.1	12.8	4.9	7.8	1.5
10-19	13.9	11.5	5.2	7.6	2.0
20-49	20.1	11.5	6.0	8.0	4.4
50-99	22.7	11.7	4.5	6.8	6.4
100-199	25.8	12.5	4.1	7.6	9.3
200-499	22.1	8.6	0.7	2.4	18.2
500 or more	27.6	11.0	2.3	4.0	58.2
Total	24.0	12.3	2.6	5.0	100.0

Source: Amsden (1989, p. 164)

Moreover, Leonardo Lanzona's study of the Philippines shows that although the economy grew at reasonable rates in the 1990s, it was a 'jobless growth'. In the face of relatively high increases in average wages and stagnating labor productivity, some TNCs (transnational corporations) have chosen to transfer operations to more competitive economies, such as China and Vietnam, and those that have chosen to remain "have found it more profitable to invest in capital." Lanzona explains that "in real terms average daily wages increased by 55 percent from 1987 to 1999, but labor productivity was low in comparison to the Asian counterparts."[76] For this reason, an IMF-sponsored study by Ray Brooks recommended moderate increases in real minimum wages instead of improving labor productivity through technology and human resources development. The study lacks any concrete suggestion as to how economic growth can be improved.[77]

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[74] Vos and Yap, *The Philippine Economy*, p. 29.

[75] Meynardo Orbeta, 'National Report Philippines', *SMEs in Competitive Markets*. Tokyo: Asian Productivity Organization, 2002, p. 260. In the Philippines SMEs are classified based on total assets (excluding land) as micro-enterprises (assets up to Php 1.5 m (US$37,500), small enterprise Php 1.5m (US$37,500-375,000), and medium enterprise Php 15 m to Php 60 m (US$ 375,000-1.5 m) (exchange rate at (Php40=US$1, December 2000). This definition which was established by the SMED (Small and Medium Enterprise Development Council), a combined government and private-sector body created to coordinate SME policies and programs. The National Statistics Office, however, uses a definition based on employment: <10=micro-enterprise; 10-99 small enterprise; and 100-199 medium enterprise (p. 259).

In a study by Caesar Cororaton, the average growth in TFP from 1967 through 2000 was mostly negative with a slight improvement in the 1990s, which he attributes to neo-liberal economic policy reforms.[78] Decomposing the data, Cororaton found that the quality of labor in terms of educational level has improved since the 1960s but its contribution to TFP has declined over time. He suggested that this could be due to the following factors: (1) failure of the educational system to produce the necessary skills to improve productivity; (2) declining efficiency of higher education; and (3) negative effects of brain drain.

Michael Alba argues that the Philippines has remained poor because it is "stuck in low growth trajectory".[79] He points out that the income gap between the Philippines and the US in 2000 shows that "the average worker in the US earned in 47.5 days what the average workers in the Philippines earned in a year". "The low standard of living of the Philippines is mainly accounted for by the total factor productivity estimate [or the efficiency with which inputs are combined to produce output] which is only 20.6 percent of that of the US" (Table 1-5). As TFP is "key to raising a country's standard of living", Alba argues that economic growth is not "so much of factor accumulation" as it is about "organizational and institutional change that solves coordination problems."

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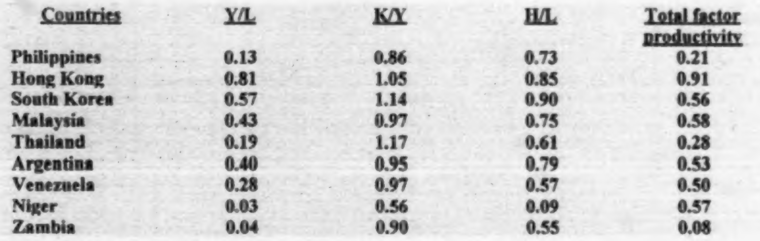
[76] Lanzona, 'Jobless growth, trade and globalization', p. 10.
[77] Ray Brooks, 'Why is unemployment high in the Philippines?', IMF Working Paper No. 02/23, February 2002, p. 22 .
[78] Caesar B. Cororaton, 'Total Factor Productivity', Discussion Paper Series No. 2002-01(Revised), Philippine Institute for Development Studies, March 2002, http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN005115.pdf.; Caesar B. Cororaton, 'Total Productivity Growth in the Philippines: 1960-2000', *Asian Development Review* 22 (1), 2005, pp. 97-113. http://www.adb.org/documents/periodicals/adr/pdf/ADR-Vol22-1-Cororaton.pdf.
[79] Michael M. Alba, 'The Philippine Economy from the Perspective of Growth Economics (Part II), Action for Economic Reforms, 2006, http://www.aer.ph/index.php?option=com_content&task=view&id=474&Itemid=46&limit=1&limitstart=0.

Table 1-5
Levels of accounting, 2000, Ratios to the US



Countries	Y/L	K/Y	H/L	Total factor productivity
Philippines	0.13	0.86	0.73	0.21
Hong Kong	0.81	1.05	0.85	0.91
South Korea	0.57	1.14	0.90	0.56
Malaysia	0.43	0.97	0.75	0.58
Thailand	0.19	1.17	0.61	0.28
Argentina	0.40	0.95	0.79	0.53
Venezuela	0.28	0.97	0.57	0.50
Niger	0.03	0.56	0.09	0.57
Zambia	0.04	0.90	0.55	0.08

Source: Alba (2006, p. 2) http://www.aer.ph/index.php?option=com_content&task=view&id=474&Itemid=46&limit=1&limitstart=1

Alba then asks the question – Why does the Philippines have the wrong attributes for long-term growth? He suggests that the answer lies in 'social infrastructure' which he says is "the bedrock of economic environment that is supportive of productive activities, that encourages capital accumulation and skill acquisition, and that promotes inventions and technology transfer." Simply put, the Philippines has a bad social infrastructure defined as "the set of social norms, laws, and government policies, and the (formal and informal) institutions that enforce them." Finally, he identified two solutions which he argues are "absolutely essential strategies" for the economic transformation of the Philippines to come to fruition: "an effective, efficient, and high-quality education system and a vigilant civil society that demands high accountability from government."

Alba is correct that economic growth in the Philippines is about solving organizational, institutional and coordination problems. Obviously, the only institution which is legally and politically empowered to do that enormous task is the Philippine government or bureaucracy. But Alba did not ask why the government is not doing what it is supposed to be doing. A government which fully embraces economic liberalism cannot fulfill what Alba wants. There is a huge gap, if not incoherence, between a government which believes a policy based on 'the invisible hand' and the reality of an economy that needs a 'visible hand', actively coordinating to make that organizational and institutional change happen.

I fully agree with Alba that a high-quality education system and a responsible government are necessary. However, these are not sufficient to support productive activities, much less to accumulate skills and promote invention and technology transfer. To have mastery over borrowed technologies and learn how to use them effectively, to develop new sets of skills and new ways of organization and knowledge of new markets requires risk-taking, entrepreneurship and good management.[80] Chris Freeman and Carlota Perez point out that rising confidence among businesses will not take place unless a policy environment which minimizes these risks and uncertainties are provided. They wonder that despite the universal agreement among economists over these facts, it is still common among economists to look to self-regulating market mechanisms and monetary or trade policy as the main forces governing investment behaviour.[81] There is a need to look beyond trade and monetary policy to create that social infrastructure which Alba deemed crucial to promote economic development in the Philippines.

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[80] Richard Nelson and Howard Pack and the World Bank, 'The Asian Miracle and Modern Growth Theory' October 1997, http://www.worldbank.org/html/dec/Publications/Wokpapers/WPS1800series/wps1881/wps1881.pdf, Accessed December 10, 2007.

[81] Chris Freeman and Carlota Perez, 'Structural crises of adjustment: business cycles and investment behaviour', in Giovanni Dosi et al. (eds.) *Technical Change and Economic Theory.* London; New York: Pinter Publishers, 1988, pp. 38-66.

1.3 Beyond free trade policy

An industrializing economy is typically characterized by high productivity in a few strategic industries underpinned by technological innovation. The inability of the Philippines to industrialize and to achieve a sustained path of economic growth is clearly a consequence of the low level of productivity of its manufacturing and agriculture sectors. And considering the role of technology in productivity improvement, the lack of technological and innovative capabilities among Filipino firms is at the root of the industrial problem.

The failure to industrialize, in both IS and EP periods, shows that the matter goes beyond a debate over trade policies, i.e. whether to adopt open or protectionist regimes. Those who are for the liberalization of the Philippine economy argue that in an open economy an environment that encourages the free flow of technology is provided, and through price signals the market facilitates technology transfer. Those who oppose this policy argue that protection is needed for 'infant' industries. Trade policies are insufficient. There is a need to deepen the Philippine agricultural and industrial structure by building up the country's technological capabilities, requiring selective and not wholesale liberalization or protection and, most importantly, an integration of institutions relevant to innovation so that they complement rather than work against each other.

When EO (Executive Order) 241 was reversed by Pres. Gloria Macapagal-Arroyo, it triggered a fierce debate among experts in the Philippines. That EO overturned the unilateral liberalization program pursued by the Philippines after its ratification of the GATT-WTO (General Agreement on Tariffs and Trade-World Trade Organization). The move implied a slow-down in lowering tariff rates to protect vulnerable domestic industries. But unless this is combined with policy initiatives to build the technological capabilities of Filipino firms, a dynamic manufacturing sector and a progressive Philippine economy certainly will not be realized. Instead, what happened in the past will be repeated – protective tariff measures that did not complement technological innovation and learning policies resulted in firms that never 'grew up'.

In the light of the experiences of some of the high-performing Asian economies, the negative effects of IS and industry protection in the Philippines need to be examined closely. For instance, Taiwan's bicycle industry grew not solely because of EP, since the switch from IS to EP took place in 1960, but the industry's growth did not occur until the early 1970s. Wan-wen Chu posits that a combination of three factors – import-substitution, a favourable environment, and the globalization of production – were responsible for the success of the industry. [82]

The government offered protection during the IS period and provided interventions to help the industry even after it switched to EP. It extended help to the industry in solving production problems by establishing and enforcing national standards and setting up the Taiwan Bicycle Industry R&D Centre. The latter assisted the parts industry in their R&D needs to replace Japanese imports of component parts and to build local technological capability. Producers have also undertaken joint research projects with public R&D institutes to upgrade their technology.

There was no distinction between the IS and EP phases in Taiwan because as the domestic economy was protected, exports of manufactured products were also encouraged. Robert Wade argues that Taiwan's government took a "strategic view of trade".[83] Taiwan's skilful bureaucrats used a 'managed trade' strategy[84] rather than a wholesale free trade regime. Wade defines trade management, more narrowly, as "intervention steered by the government's vision of the appropriate industrial and trade profile of the economy and by feedback from results on the ground."

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[82] Wan-wen Chu, 'Causes of growth: a study of Taiwan's bicycle industry', *Cambridge Journal of Economics* 21 (1), January 1997, pp.66-69.

What is clear in Taiwan's experience, then, is that trade policies were combined with technology policies that encouraged learning and the build-up of capabilities for technology and innovation in local companies. The NSI in Taiwan involves the integration of key institutions for formulating technology and innovation policy, performing R&D, financing R&D, promoting human resource development, bridging and promoting technology entrepreneurship. Both formal and informal interactions were encouraged among these institutions.[85]

In Britain's industrial history, the British monarchy and state government rendered assistance so that technological capabiiities in wool manufacturing during the pre-industrial revolution period were acquired. Many economic historians point out that monarchs from Edward III (1327-1377) to the Tudors, especially Henry VII (1485-1509) and Elizabeth I (1558-1603), used developmental policies that would today be described as 'infant industry protection'.[86] In fact, by 1820 British tariffs on imported manufactured goods were the highest in Europe, averaging about 50 percent.[87] Similarly, scholars who have studied American economic history found that infant industry protection was a prominent feature in the early development of US industry, especially in certain key industries such as textiles, iron, and steel.[88] Tariffs began during the time of Alexander Hamilton, the first Secretary of the US Treasury, when infant industry protection was aggressively promoted through his *Reports of the Secretary of the Treasury on the Subject of Manufactures (1791)*. And tariff rates in the US from the 1820s until the inter-war years ranged from 35 percent to 50 percent.[89]

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[83] Robert Wade, 'Managing trade: Taiwan and South Korea as challenges to economics and political science', *Comparative Politics* 25(2), 1993, pp. 147-67.

[84] Wade writes: "The rule for raw materials and intermediates is simple: if used for export production they pay little or no duty (via rebate or exemption). The rules for imports of machinery and equipment are more complex. Duty is not paid if the machinery and equipment in question is 'not yet domestically manufactured,' is used in the 'sophisticated' industries in which Taiwan wants to expand its productive powers (iron and steel, electrical engineering, electronics, machinery, shipbuilding, chemicals, petrochemicals and one or two others), is used to produce certain specified products within the industries, or is used to produce these products according to certain scale, capacity, purity, or local content requirements…Machinery and equipment imports for production of nonspecified items (or specified items which fail to meet the additional requirements have to pay duty. If the machinery in question is domestically manufactured, imports may still be allowed, but the normal duty will have to be paid…The rules of tariff rebate, then, give more incentives to some industries and products than others, according to criteria derived from a wider industrial policy" (p. 151).

[85] Pao-Long Chang and Hsin-Yu Shih, 'The innovation systems of Taiwan and China: a comparative analysis', *Technovation* 24 (2004), pp. 529-539.

1.4 Summary

This chapter contextualizes the research problem and articulates the motivation of the present study. Poverty remains a major development issue in the Philippines. The economy is incapable of sustained economic growth. Numerous explanations have been advanced by scholars from different disciplinary persuasions. Their elucidations are not mutually exclusive and, like the pieces of a puzzle when put together, they give a realistic picture of the complex problems surrounding Philippine industrial, economic, and social stagnation. However, there is still more to be understood.

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[86] Friedrich List, *The National System of Political Economy*. London: Longmans Green, 1885, pp. 35-56.
[87] Chang, *Kicking Away the Ladder*, pp. 19-20.
[88] Paul Bairoch, *Economics and World History- Myths and Paradoxes*. Brighton: Wheatsheaf, 1993, p. 30.
[89] Chang, Kicking Away the Ladder, pp. 24-32.

Some studies reviewed allude to the obstructive role of the Philippine government in the failure to industrialize. But although the expression 'lack of political will' is useful and convenient for rhetorical purposes, it needs to be grounded on solid evidence to be persuasive. What many scholars have suggested as a major problem in the Philippine situation needs to be interrogated. The primary objective of this study then is to explain how and why the 'lack of political will' came into being. Before such a task is undertaken, however, there is a need to show that the problem of low productivity in the Philippines is due to lack of technological capability. I examine comparatively the experiences of more developed economies vis-à-vis the Philippines' experience of industrial underdevelopment. The comparison shows that remarkable productivity performance in industrialized countries is due to: (a) high productivity levels of technology-intensive industries in the early phase of industrialization, (b) the major role of technology and innovation in the highly productive industries, and (c) the role of SMEs in that rapid growth, especially in the Asian economies.

These findings question the privileging of trade issues in mainstream international political economy and development. They do not explain questions of productivity, poverty, and underdevelopment in the Philippines, in particular, and the global South, in general. The analytical centrality of trade, which is more important for industrialized countries and central to the globalization era, is predicated on a view that the world is populated by trading economies with a robust production base. However, most countries in the developing world do not have technologically innovative, let alone developing, production bases. There is a need to move development policies in the developing (or underdeveloped) South beyond a foreign trade and investment focus. The challenge facing the Philippines is how to successfully transform a trading economy into an innovative production- and service-oriented economy. Historically, a production-focused developmentalism was "a mandatory passage point on the road towards global free trade among equals", as Reinert argues (Chapter 1). It is illustrative to examine the relationships between developmentalism, nationalism, and a system of innovation and production in countries that have successfully transformed their economies.

Chapter 3 Tracing the roots of the challenge, *1565-1898*

> Here I have become half physician and half businessman. I have established a commercial company here. I have taught the poor Mindanao folk to unite for trading so that they may become independent and free themselves from the Chinese and thus be less exploited. But I have to talk a great deal with the local governor, who, despite being a good man, is a supporter of the Chinese and prefers the Mongols to the Mindanao people. Fortunately the company is prospering; we make a little profit; and the poor Dapitan folk are becoming active and satisfied.
>
> ***Jose Rizal (1889)***

> Before David Ricardo there was little doubt that emulation would be the best strategy, and historically the most important contribution of Ricardo's trade theory was that, for the first time, it made colonialism morally defensible. Today we have totally dismissed the idea that a strategy of emulation was a mandatory passage point for all nations that are presently rich: we have outlawed the key tools needed for emulation.
>
> ***Erik Reinert (2007)***

To search where the roots of the failure might lie, we need to understand the past, for it is only in coming to terms with what was lost and what the country could have been that future possibilities can be imagined or explored and boldly set out. The question of nationalism has received a revitalized attention in the Philippines recently as Filipinos are made acutely aware of the painful and peculiar reality that the Philippines, as Trevor Hogan argues, is "*in* Asia but not *of* Asia" – a region characterized by dynamism where countries driven by a strong sense of nationalism are engaged in a race towards modernization.

My thesis is that the foundations of the enduring social structures which continue to impede the modern transformation of the country were laid during the Spanish colonial period.[1] What troubles the Philippines of today are an economy dominated by global trade and financial interests and a government controlled by cosmopolitan political leaders and bureaucrats which, time and again, have privileged economic liberalism. These interacting political, economic and cultural (religious, intellectual) élites established the much wider socio-economic order in which technological innovative activities required to bring about the shift from trade- and finance-based economy to production-oriented one, making industrial capitalists more predominant, were completely marginalized.

In this chapter my aim is to trace the beginnings of the formation and the subsequent entrenchment of the dominant transnational historic bloc(s) in Spanish Philippines (1565-1898). Sub-section 3.1 examines the establishment and entrenchment of a globally-oriented political, economic, and cultural historic bloc in the Philippines. I show that the first wave of globalization primarily for raw materials and 'home-spun' goods, for the first time integrated the import-export business interest of global traders and financiers (European and locals) who were not necessarily politically in accord with the interest of the colonial Spanish government. Sub-section 3.2 traces the beginnings of local political and cultural structures in the Philippines, highlighting the impact of colonialism as fragmentation of the local elite or their nationalist visions, and the legacy of the colonial Spanish education system. Against this backdrop, I discuss the broader social environment in 17th –century England to show that the absence of colonial structures and the development of solid nationalist political, economic, and cultural elites provided the leadership of a social environment that fostered innovative activities (Sub-section 3.3) Sub-3.4 summarizes the chapter.

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[1] Hedman and Sidel argue that the present institutional environment in the Philippines is not so much a remnant of Hispanic colonization, but of "state structures erected and imposed in the course of the American colonial era." They reasoned that it was "the timing, phasing, and structural design of [American] colonial democracy" that "left several lasting legacies which have continued to shape Philippine politics long after independence in 1946." The institutionalization of a multi-tiered system of executive and legislative elections had entrenched the interests of the landed segment of the ruling class in Philippine politics and economy. Once in public office, they not only practiced political patronage, but also influenced the nature and direction of public policy to serve their own interests. See Eva-Lotta Hedman and John Sidel, *Philippine Politics and Society in the Twentieth Century: Colonial Legacies, Post-Colonial Trajectories.* London: Routledge, 2000, p.7.

3.1 The origins of globally-oriented economic interest

In this sub-section I discuss the origins of the mercantile and financial economy dominated by the Spanish merchants [both in colonial Philippines and New Spain (now Mexico)] and the Chinese merchants. Spain ruled its only colony in Asia through the viceroy of Mexico. I then go on to examine the continuity and changes of this material interest in mid 18th century through late 19th century when Spain was under the English sphere of influence. At that time the mercantile forces were dominated by English and American merchants and they were joined by the emerging landed Filipino élite engaged in export-crop businesses. At this time the economy was strongly linked with American markets. Free markets devastated the pre-colonial society's growing agriculture and traditional industry. The decimation of local entrepreneurship and a conservative Spanish colonial education's long-lasting consequences for the marginalization of primordial industrial forces are discussed.

Spain in the early modern period was a leading imperial power in Europe and beyond. At the height of Spain's greatness, it had established its institutions and social forces in its vast colonial domains, including the Philippines. However, Spain ruled its only colony in Asia through the viceroy of Mexico, prompting one scholar to say that "From the beginning, Spanish colonization of the Philippines was a Mexican enterprise".[2] While the occupation was a "fiscal nightmare for the Spanish administration in the Philippines, for the viceregal authorities of Mexico, and for the Castilian crown in Madrid"[3], it was a period of enormous profit-making and enrichment for merchants and financiers engaged in import-export business. More than that, however, it created an enduring economic structure which entrenched mercantile and financial interests in the local economy until today.

The politics of Spanish colonization of the Philippines were influenced by and intertwined with broader imperial, strategic, political, cultural, and commercial goals in the Asia-Pacific. As early as 1569 a controversy arose among opposing coalitions of government officials and friars over the practicality of the colonial occupation. Those who were opposed argued that it was a losing proposition as far as the exploitative potential and financial viability were concerned, as it was a "deficit government", receiving a yearly *situado* (subsidy) from the wealthier Mexico.[4] However, if the occupation was to be maintained, converting the Philippine Islands into a trading post was a must.[5]

The Philippines was held as a colony from 1565 until 1898 not only to use the archipelago as "a center of missionary effort in the Orient". In the minds of the Spanish authorities, *Las Islas Filipinas* were "absolutely necessary": "to maintain the authority, grandeur, and reputation of [the Spanish] crown", to serve as a "defense of the Moluccas and the spice trade", and "to protect for both crowns [Castilla and Portugal] the commerce of China."[6] However, the debate did not die down as after some 70 years the *procurator-general* of the Philippines, Don Juan Grau y Monfalcón, had to justify (again) the maintenance of the colony and its commerce in his memorial in 1640 to Señor Don Juan de Palafox y Mendoza, a member of the Majesty's Council in the royal Council of the Indias [East Indies].[7]

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[2] Katharine Bjork, 'The link that kept the Philippines Spanish: Mexican merchant interests and the Manila trade, 1571-1815', *Journal of World History* 9 (1), Spring 1998, p. 27.

[3] Leslie España Bauzon, *Deficit Government: Mexico and the Philippine Situado (1606-1801)*. East Asian Cultural Studies Series 21. Tokyo: Centre for East Asian Cultural Studies, 1981, p. 142.

[4] Ibid., p. 4.

[5] This was evident in the letter of Miguel López de Legazpi (1569), first governor of the islands, to the viceroy of Mexico, translated by Emma Helen Blair and James Alexander Robertson, *The Philippine Islands 1493-1898*. Cleveland: Arthur H. Clark, 1911, vol.3, pp.45-53, (Blair and Robertson, hereafter).

The entrenchment of trade interests in Spanish Philippines was influenced by the much-coveted and burgeoning foreign-trade dynamic surrounding the Chinese silver trade and the Moluccas spice trade. The Spanish officials saw the Philippines' continued occupation as crucial to their success in the struggle against the Dutch and Portuguese merchants for control over the Moluccas spice trade.[8] Moreover, it was to preserve for both Castilian and Portuguese crowns the "commerce of China" that Spain maintained the Philippines as its colony.[9] The galleon trade was regarded as "one of the most beneficial and lucrative of those in the entire Orient". In fact, the strength of this import-export business had so impressed the Italian Gemelli Careri, who visited the Philippines in 1696 that he stated that Manila "was to be accounted one of the greatest places of trade in the world".[10] The galleon trade was significant for Spain to maintain and preserve – "For if they were lost", as Grau argued in his memorial, "the resulting damage would be great and excessive beyond any possible comparison or proportion to what the islands now cost us."[11]

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[6] Blair and Robertson, p. 10.

[7] A memorial from Don Juan Grau y Monfalcón sent in 1640 to Señor Don Juan Palafox y Mendoza, a member of the Council of the Indias and Bishop of Puebla de los Angeles, Blair and Robertson, vol. 30, pp. 24- 109.

[8] Ibid., pp. 36-39.

[9] It must be noted that long before the Spaniards came to the Philippines a profitable trading system existed based on Chinese junks enroute from the South China Sea to Sulu, Borneo, and Moluccas. In a sense the development of the Manila-Acapulco galleon trade (1571-1815) was influenced by the prior junk trade. Chinese literature and artefacts discovered in the Philippines show that this trade between China and the Philippines had flourished since the Song period (960-1279). See Edgar Wickberg, *The Chinese in Philippine Life, 1850-1898*. New Haven, CT: Yale University Press, 1965, pp. 3-41; John Wong, *The Political Economy of China's Changing Relations with Southeast Asia.* New York: St. Martin's Press, 1984, p. 123.

Manila was crucial to the global trading process.[12] For some 250 years the galleons provided the link of a bustling trade driven by China's unlimited demand for silver from Mexico and Peru and Europe's demand for Chinese finished goods, such as porcelain wares, silk, and tea. Some scholars argue that this was a significant period as it ushered in a new era of world trade linking an existing sophisticated Asian commercial network centred on China with an expanding European world system.[13] Between the 1500s and the 1800s, a third or about 40 percent of all the silver produced by Peru and Mexico, which supplied about 85 percent of the world's demand, flowed into China.[14]

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[10] Careri, quoted in Nicholas Cushner, S.J., *Spain in the Philippines: From Conquest to Revolution.* Quezon City: Ateneo de Manila University, 1971, p. 130.
[11] Blair and Robertson, vol. 30, p. 43.
[12] Wickberg, *The Chinese in Philippine Life*, p. 49.
[13] Curtin used the concept of "transit market" to describe the function of Manila in "linking a Chinese trade diaspora" with the galleons from Mexico. Philip D. Curtin, *Cross Cultural Trade in World History.* Cambridge: Cambridge University Press, 1984, p. 134. Bjork was of the opinion that the triangular relationship between Spain, New Spain, and the Philippines was determined not by the "dynamics of an emerging European world system". She argues that "Spain and its colonies were affected by the logic – cultural as well as economic – of the Chinese world system, in which the Pacific trade played a part." Bjork, 'The link that kept the Philippines Spanish', p. 26. This position was consistent with Flynn's and Giráldez's where they argue that the Europeans participated "in a vast and sophisticated existing Asian commercial network". Dennis Flynn and Arturo Giraldez, 'Born with a 'Silver Spoon': the origin of world trade in 1571', *Journal of World History* 6 (2), 1995, p. 217. Pomeranz and Wong, on the other hand, argue that "there were important dynamics of expansion common to areas within each of these large regions [Eirope and China]" but they don't claim "that either Europe as a whole or China as a whole was changing in a lockstep fashion." Ken Pomeranz and Bin Wong, 'China and Europe: 1500-2000 and Beyond: What is Modern"?' http.afe.easia.columbia.edu/chiinawh/web/s5/s5_4.html.
[14] Pomeranz and Wong point out that over this period, the huge Chinese population and a dynamic and commercially sophisticated economy needed a medium of exchange – money. This led to the invention of paper money during the Song dynasty, however later when China got into a fiscal crisis the Chinese people lost trust on it because the Chinese government solved the crisis by printing more money. Silver coinage replaced as a medium of exchange.

China's emperor repulsed embassies seeking to establish trade, stating that "the Celestial Empire, ruling all within the four seas [i.e., the world], simply concentrates on carrying out the affairs of Government properly, and does not value rare and precious things", yet "there was one exception: silver."[15] The Chinese market for coins was what elevated the value of the silver commodity and provided the impetus for trade around the globe[16], thus Katherine Bjork contends that the Asian trade was not external to the world system: "Silver was one medium of the European world system that had a place in Chinese world system schemes."[17]

The Chinese 'silver interest' was matched with the Spanish merchants' (both in the Philippines and Mexico) interests to control the monopolistic galleon trade. The keen interests of the merchants made the Manila-Acapulco trade not only endure but also prosper. However, it placed the Spanish crown in a difficult situation where it was torn between "maintaining a foothold in Asia", which meant tolerating or even encouraging the galleon trade, and protecting the metropolitan merchants or curbing the flow of silver to China. The merchants of Seville who dominated the Atlantic trade in European goods had always been opposed to the colonization of the Philippines because the Chinese merchandise carried by the Manila-Acapulco galleons, particularly Chinese silk "undersold those of Spain in Mexico and Peru".[18] In Grau's memorial he notes that "the

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[15] Marshall Sahlins, 'Cosmologies of capitalism: the trans-pacific sector of the world system', *Proceedings of the British Academy* 74 (1988), p. 10 cited by Bjork, 'The link that kept the Philippines Spanish', pp. 30-31.
[16] Flynn and Giráldez, 'Born with a Silver Spoon', p. 206; Pomeranz and Wong, 'China and Europe', http://afe.easia.columbia,edu/chinawh/web/s5/s5_4b.html.
[17] Bjork, 'The link that kept the Philippines Spanish', p. 31.
[18] Blair and Robertson, vol. 1 p. 62.

Chinese goods were so cheap that those of Castilla were estimated at three times their price."[19]

The steep competition from Chinese products prompted Philip II to abolish the galleon trade in order to "protect Spanish industry and to preserve to Spanish producers the American market." A succession of decrees was then made by the crown to the viceroy of Mexico. In 1587 the shipment of Chinese cloths from Mexico to Peru was prohibited. In 1591 all direct trade between Peru or other parts of South America and China and the Philippines was banned, and in 1593 a decree, not rigorously enforced till 1604 "absolutely limited the trade between Mexico and the Philippines to $250,000 annually for the exports to Mexico, and to $500,000 for the imports from Mexico."[20] The suspension of the trade link was "very injurious to the Philippines" as "the islands have experienced so great a decline in their commerce."[21]

The King pointed out: "if that trade [Manila-Acapulco] continues, the trade in cloth exported from these realms would cease or be greatly decreased." Also, the textiles "are bartered only for gold and silver, or coin, because there is abundance of everything else there", which means that Spain loses "that whole amount". But despite the strong opposition of producers in Spain trade has been continued. Bjork maintains that this was largely because of the commercial interests of both Mexican officials and merchants who "were in a position to control the trade for their benefit."[22] Edicts were not always enforced, as William Lytle Schurz points out: "Seldom was the execution of any group of laws in the colonial code of the empire insisted on with equal persistence or rigor."[23] In fact a bishop once lamented in a letter to the king: "It is said commonly that there is nothing to be expected except thunderbolts from heaven to punish what is done."[24]

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[19] Blair and Robertson, vol. 30, p. 77.

[20] Blair and Robertson, vol. 1, p. 62.

[21] Blair and Robertson, vol. 30, pp. 70, 73.

[22] Bjork, 'The link that kept the Philippines Spanish', p. 39.

In the minds of some colonial authorities, Spain did not benefit from the trade. They thought the galleon trade siphoned silver to China. Concerned about the flow of silver to China and the strength of Chinese merchants, the auditor, Melchor Davalos, wrote Philip II in 1584 informed the King of the situation. [25] Efforts to prevent the continuous flow of silver to China led an 'Ordinance Forbidding the Indians to Wear Chinese Stuffs'. The governor Juan de Cuellar argued that the purchase by native Filipinos of Chinese garments carries away 200,000 pesos: "This money leaves the realms of his Majesty, and is carried to a foreign country, in violation of royal edicts; this would be prevented if the said natives were not to clothe themselves with the said stuffs."[26] Moreover, the Ordinance was seen by the governor to be important to stop the exportation of raw materials from the Philippines for China's industries: In prohibiting the Filipino 'Indians' from wearing Chinese cloths "another serious evil would cease; the natives would no longer sell raw cotton to the Chinese, who take it to their own country and make it into cloth, and then return to sell it to the natives, and with these goods deprive them of their money."[27] The intertwining of trade and financial interests in the Philippines began during the Spanish regime. Nicholas Cushner notes that a financial-cum-philanthropic organization, *Santa Hermandad y Cofradia de la Misericordia*

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[23] William Lytle Schurz, *The Manila Galleon: The Romantic History of the Spanish Galleons Trading between Manila and Acapulco.* New York: E.P. Dutton , 1959, p. 368.
[24] Letter from Miguel de Benavides, bishop of Nueva Segovia, to Felipe II, 17 May 1599, Blair and Robertson, vol. 10, p. 94.
[25] Letter from Melchor Davalos to Philip II, 1584, Blair and Robertson, vol. 6, p. 61.
[26] Gomez Perez Dasmariñas, by order of the governor, Juan de Cuellar, 'Ordinance Forbidding the Indians to wear Chinese Stuffs, 9 April 1591, Blair and Robertson, vol. 8, pp. 78-89.
[27] Ibid.

(Misericordia of Manila) was established.[28] The primary sources of the Misericordia's income came from donations, estates, legacies in the form of *obras pias* (charitable foundation), taxes on property, and tributes from the *encomiendas*. The income was apportioned three ways: one part was lent to the Spanish merchants involved in the Manila galleon trade; one part was used to finance the Chinese Asian trade, and one part was used as reserve capital.[29] At the end of the 18th century, the Misericordia was a powerful economic force in the Philippines: "Instead of being a simple source of charitable works, it was the financial motor of the galleon trade". Some of its resources were invested as stocks in the *Banco Español-Filipino* (now Bank of the Philippine Islands) established in 1852. The Catholic friars' financial investments in Hong Kong which siphoned money from the Philippines were the object of attacks by the young Filipino *ilustrados* in their propaganda writings.[30] These arguments, Megan Thomas points out, "are surprisingly familiar to an early twenty-first-century ear: friar orders were accused of being transnational corporations (which they literally were), with loyalty to no nation, and which could, therefore, escape obligations to any nation."[31]

The arrival of the Spaniards and the presence of a lucrative market for Chinese goods both for the domestic economy and the galleon trade drew the Chinese to settle in the Philippines in the early 1580s.[32] Ship-owning Chinese merchants seized the prospects. This trade route was very profitable for the Chinese especially from the 1570s to 1670s. In one trading season in the early 1580s, the sampan traders earned 300,000 in silver *reales* as against 30,000 in earlier times.[33] There was, however, an uneasy relationship between the Spanish government and the Chinese due to cultural, economic, and political reasons which resulted in the Spanish government discriminating against the Chinese traders. Policies towards them were characterized by heavy and arbitrary taxation, control, and conversion. There were also episodes of Chinese expulsion from the islands in 1686, 1744, 1755, and in 1766 following Chinese collaboration with the English during the invasion of the Philippines in 1762-64. Only the native women and their Chinese *mestizo* children and a few Catholic Chinese were allowed to remain.

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[28] The Misericordia was founded by the Brotherhood of Mercy in the Philippines on April 16, 1594 at the Jesuit Church of San Ignacio in Manila. The Brotherhood comprised Spanish dignitaries, such as the acting governor of the Philippines, Luís Pérez Dasmariñas, acting head of the Diocese, Cristobal de Salvatierra, representatives of the city government, the master-of-camp, Diego Ronquillo, and a variety of friars. Misericordia Manila was recognized by the Misericordia of Lisbon in 1606 as the new *hermandad* when the statutes were approved by the latter organization (Cushner, p. 140).

[29] Cushner, *Spain in the Philippines*, p.144, 151, 6, 7.

[30] See particularly 'Los Frailes y la Biblia', *La Solidaridad*, Feburary 29, 1892; Lopez Jaena, 'Filipinas en la Exposicion Universal', Marcelo H. Del Pilar y Gatmaitan, 'La Frailocracia contra el Frailismo', *La Solidaridad*, May 31, 1894, cited in Megan C. Thomas, 'Orientalist Enlightenment: The Emergence of Nationalist Thought in the Philippines, 1880-1898', PhD Dissertation. Cornell University, 2002.

[31] Thomas, 'Orientalist Enlightenment', p. 42.

Nonetheless, the colonial government reopened the colony to Chinese immigrants and business activities in 1778. A high-ranking Spanish official, Tavora, wrote to King Philip IV: "the country cannot get along without the infidel Sangleys [Chinese], for they are the ones who bring us food from China."[34] The Chinese brought practically everything that was needed in the local economy – from cotton, silk yarn and cloth, paper, umbrellas, crockery, porcelain, dried and fresh fruits, spices, salt, meat, furniture, iron, jewelry, tea, wheat flour, gunpowder, nails and metals. Why the local economy was unable to supply the local needs will be explained later.

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[32] John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Response, 1565-1700*. Madison, WI: The University of Wisconsin, 1959, p.11.
[33] Cushner, *Spain in the Philippines*, p. 185.
[34] Serafin Quiason, 'The sampan trade', 1570-1770, in Alfonso Felix, Jr. (ed.) *The Chinese in the Philippines Vol. II*. Manila: La Solidaridad Publishing House, 1969, pp. 163-164.

As part of the Seven Years War, the English occupied Manila between 1762 and 1764.[35] Manila was made open to Western ships and Spanish Philippines was incorporated within the sphere of influence of the British Empire. After English occupation ended, and Spanish government power was regained in Manila in 1766, the free trade regime started by the English in 1762 was strengthened by the restored Spanish government; this allowed the legal entry of imported goods carried by European ships, although it was believed that European and American cargoes had been imported to the Philippines illegally. Moreover, Spain in mid 18th century was in decline and in deep turmoil and, in fact, what came to be known as the War of Independence (1808-14) was, in part, a response to a deep sense of crisis in Spanish society.[36] Guided by the Bourbon monarchs' 'enlightened' policies, Spain instituted reforms in its colonies including the Philippines. From 1764 to 1787, an internal economic development policy was instituted in the colony's economy. The Spanish Governor-General José de Basco y Vargas was a product of Spain's middle class and a firm believer in a professionally-based commercial society. His philosophy of economic development "was based on the exploitation of colonial products and the liberalization of foreign trade" to allow foreign competitors to the galleon trade.[37]

When the English occupied Manila, foreign businessmen other than the Spanish "entered the market for Philippine agricultural produce and pushed up land values by making it profitable for landowners to specialize and produce [crops] for the export markets."[38] This benefited the landed Chinese *mestizos* and native *indios*. As the Chinese were expelled from the colony, a group of Chinese-Filipino *mestizos* and native *indios* who were landed and engaged in export crop production "took over the role of economic middlemen". The Chinese-Filipino *mestizos* and native *indios* were to become the local Filipino political and intellectual elites known as *ilustrados* whose economic interest was in the export of crops. I will discuss this later. Outside of Manila, the *mestizos* and rich *indios* were involved in buying agricultural produce from native farmers and selling it in Manila.[39] In fact, the openings of Sual port in Central Luzon, Iloilo in the Visayas, and Zamboanga in Mindanao in 1855, and Cebu port in 1860 were largely due to the Chinese *mestizos*' export-crop activity. Soon after the Suez Canal was opened in 1869, two more Philippine ports were opened for foreign entry in 1874: Legazpi in south Luzon and Tacloban in Leyte. Peter W. Stanley points out that from 1850 to 1893 sugar exports largely produced by the landed *mestizos*, *indios* and Spaniards, financed by English and American commercial houses in Manila, multiplied 600 times.[40] Exports, mainly from sugar and other agricultural products such as hemp, rose sharply, earning for the country, between 1820 and 1895, from (Philippine peso) ₱1 million to almost ₱37 million, with the US as the major market. The stimulus for the development of these plantations in the Philippines was provided by "advances of American capital", and these foreign capital infusions redirected the local economic activity towards the production of export crops.

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[35] Peter W. Stanley, *A Nation in the Making: The Philippines and the United States, 1899-1921*. Cambridge, MA: Harvard University Press, 1974, p. 25-26.

[36] There was the growing burden on the local populace of obligatory military levies, rents and seigneurial dues, the reduction of fiscal immunities of the privileged, and the sale of some Church lands in 1798 (to prop up the haemorrhaging national coffers and burgeoning public debt) increasingly provided a common ground across broad sectors of the Spanish society to demand a liberal regime. Seigneurial dues were taxes created by the seigneurs, by virtue of their legal jurisdiction, on various items, such as water, woods and scrublands as well as on commercial and artisanal activities, such as milling and the baking of bread, and this had become a means to consolidate their property rights.

[37] Keith Lightfoot, *The Philippines*. New York: Praeger Publishers, 1973, p. 87-88, 191-194.

It became increasingly clear in the 19th century that Spain had ceased to be a great world empire and had only marginal status in Europe. Its non-inclusion in the Concert of

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[38] Ibid.

[39] Cushner, *Spain in the Philippines*, p. 176.

[40] Stanley, *A Nation in the Making*, p. 27, 29.

Europe was indicative of its stature in world politics. As Spain's new liberal regime was unstable, it had to depend on France and Britain for financial, military, and diplomatic support. In other words, Spain was within the French and English political and diplomatic spheres of influence.[41] This, of course, had repercussions on Spain's ambition to gain more liberal access to the Chinese market and its dealings with the Philippines, especially the further entrenchment of trade and financial interests in the colony. The restrictive Spanish policy towards the Chinese eased out with the removal in 1828 of mobility taxes imposed only upon Chinese importers. With this policy reversal, "the Chinese were continuing to gravitate toward mercantile occupations", and the Spanish government was resigned to the idea that it could encourage the Chinese to go into agriculture, which was central to the debate between the Spanish conservatives and liberals on how "to encourage Chinese assistance in Philippine economic development.[42] The 'new' policy also inaugurated a more liberal policy toward the Chinese in terms of mobility within the colony. Instead of being confined only to Manila, they were allowed to penetrate the entire archipelago, and become actively involved in local trade and distribution. After the 1840s, the Chinese dominated domestic marketing and distribution in cooperation with English and American firms.[43] As the Philippine economy grew, particularly in the 1850s, coffee, sugar, and coconut oil began to be exported. The Chinese traders acted as wholesalers, distributors, purchasing agents and money-lenders for English and American merchant firms.[44] As middlemen, they controlled not only the marketing of local agricultural production, but also the flow of consumer goods imported into the country through retail trade. Unsurprisingly, the Chinese population increased in the abaca-producing provinces such as Albay, Leyte, Samar, Cebu and Camarines Sur, in the sugar-producing areas of Iloilo and Negros Occidental, and in the tobacco growing areas of Cagayan and Isabela.[45] The opening of several domestic ports in the colony ensured the penetration of imported products to the farthest corner of the domestic economy. A head of an European importing firm in Manila said of the Chinese distributors and purchasing agents:

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[41] Enrique Moradiellos, 'Spain in the world: from great empire to minor European power', in José Alvarez Junco and Adrian Shubert (eds.) *Spanish History Since 1808*. London: Arnold, 2000, pp. 113-115.
[42] Ibid., pp. 48-50, 61.
[43] Milagros Guerrero, 'The Political Background', in Alfonso Felix, Jr. (ed.) *The Chinese in the Philippines Vol. II*, Manila: La Solidaridad Publishing House, 1969, p. 6.
[44] Stanley, *A Nation in the Making*, p. 28-29.

> The firms here, with very few exceptions, only sell in Manila and to the Chinese, who are the intermediaries for the provinces…For importers and exporters it would have not been possible to do any work at all; in fact, the trade of the islands, small as it is compared to what it might be, has depended entirely upon the Chinese, because on one side they sell to the men in the interior, and barter with the natives for produce in exchange for imports—you will see the Chinese hawker everywhere; he will go to the last nook and corner, and he will offer his goods…A European cannot work outside here for any length of time.[46]

The major player in the 19th-century Philippine economy was principally English and American businessmen, which controlled the import-export, insurance, shipping, banking, and real estate businesses. Firms such as Ker, McMicking & Co., Wise & Co., George W. Hubbell (later Peele, Hubbell & Co.) which originally functioned as commission houses had diversified their activities, Stanley notes.[47] Anglo-American trade and financial interests began to dominate the economy. According to Benito Legarda, Jr.:

> They…traded on their own account; were agents for marine, fire and life insurance companies; were agents or consignees of shipping lines, or shipowners; owned shares in such enterprises as cordage works, banks, and slipways; owned real estate, including plantations; engaged in foreign

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[45] Wickberg, *The Chinese in Philippine Life*, pp. 62-63.
[46] Ibid., p. 68.
[47] Stanley, *A Nation in the Making*, p. 26.

> exchange operations; and, most interesting of all, received funds at interest and made advances…the key function of the Anglo-American entrepreneurs in Manila was banking.[48]

Established in 1873, two English merchant banks – the Chartered Bank of India, Australia and China and the HSBC (Hong Kong and Shanghai Banking Corporation) – were responsible for the expansion of commercial businesses undertaken by the English-American in alliance with the Chinese.[49] In fact. credit availability often spelled the difference between financial success and failure for many a member of the Chinese community, Irene Jensen argues. The English and American firms served as guarantors for bank loans to the Chinese for their commercial operations. The Chinese traders were mainly concerned with the distribution of manufactured products, especially textiles. Also, the bank provided a crucial service to the Chinese traders in supplying information on new foreign markets for exports and firms keen to import to the Philippines.[50] The organization of credit in conjunction with the distribution and marketing of both imports and exports, known as the *cabecilla*-agent system, ensured a Chinese monopoly.[51] The *cabecillas*, or wholesale merchants, established themselves in Manila and created a network of agents in the provinces.[52] This loose organization of wholesalers ensured that the Chinese presented a united front when bargaining with the European importers, which allowed them to control prices. The *cabecilla*-agent system made the rival Chinese

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[48] Benito Legarda, 'Foreign Trade, Economic Change and Entrepreneurship in the Nineteenth Century', Ph.D. Dissertation. Harvard University, 1955, pp. 359-442.

[49] John Furnivall, *Experiment in Independence: The Philippines*. Manila: La Solidaridad Publishing House, 1974, p. 10.

[50] Irene Jensen, *The Chinese in the Philippines During the American Regime: 1898-1946*. San Francisco: R&E Research Associates, 1975, p. 125.

[51] Wickberg, *The Chinese in Philippine Life*, p. 74.

[52] Stanley notes: "The Manila *cabecillas*, often united in ad hoc syndicates to deal with European importers, provided a volume and regularity of purchase which suited the needs of the foreign houses. Wherefore, they received support from importers in the form of extensive credit. The Manila commercial houses advanced goods to the *cabecilla*, who advanced them to his agents, who in turn sold them to the Filipinos either for produce or for a lien on a future crop. The produce received by the agent was turned over to the *cabecilla* and eventually through him to a foreign house" (p. 29).

mestizo business less profitable, causing them to shift their interests from commerce to agriculture.

Nicholas Cushner argues that the many centuries of "preoccupation with a simple exchange trade had formed a mentality in economic affairs which preferred heavy investment with quick and large returns".[53] The trading activity did not have substantial and rapid returns to create sufficient wealth for the Spanish government in the colony, which had to be supported by an annual subsidy from Mexico. Writing in 1788, Francisco Muñoz y San Clemente succinctly described the problem of private wealth concentration in a trade-based economy in that only a fraction went to the government coffers and most of the proceeds were "in the hands of the biggest merchants"; the poor natives, he adds, "get nothing but a tiny share of it, in payment for the items" they sell. He concludes "It is therefore not surprising that the native lives in a state of indolent activity, tilling only the bit of land sufficient to feed his family and supply the local market."[54] This supports the thesis that a commercial economic structure which is based on the exploitation of price differentials between segmented markets rather than through production had only concentrated wealth on a few.[55] Effective wealth creation depends on the material capabilities of a country. An economy that relies heavily on trading rather than a robust agriculture and industry does not benefit most of the people because trade does not create mass employment opportunities. The establishment of import-export economic activity in Spanish Philippines would not have been possible without a corresponding ideational structure. Free trade led to the devastation of the growing agriculture and proto-industry sectors and the demise of local entrepreneurship.

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[53] Cushner, *Spain in the Philippines*, p. 139.

[54] Francisco Munoz y San Clemente, 'Reflexiones sobre el comercio de Filipinas', 23 August 1788, in Horacio de la Costa, S.J., *Readings in Philippine History: Selected Historical Texts Presented with a Commentary*, translation by Horacio de la Costa. Makati, Philippines: MDB Printing, 1965, p. 107. (de la Costa hereafter).

[55] Ellen Meiksins Wood, 'From opportunity to imperative: the history of the market', *Monthly Review* 46 (3), 1994, pp. 14-40.

The Spaniards accused the native *indios* of indolence, but Antonio de Morga's accounts belied this claim. Before the conquest, the native population, both men and women, were engaged not in idleness but in profitable agricultural and home-based craft industries.[56] Moreover, the natives were entrepreneurial and possess the drive for profit-making.[57] The natives also had the capability to make products which were unique and expensive, and were sought out by their Japanese customers. This shows that they had creative potential. A domestic and international trade with Japan, China, Cambodia, and other neighbouring countries existed which indicates the natives' entrepreneurial activities. The natives produced earthenware jars (*tibores*), which were sold to the Japanese for great sum of money and are used for planting their tea plant and adorn them elegantly in their inner rooms and chambers. [58] In fact, in Grau's letter to the East Indies Council in 1640, he indicated that there were commodities "produced and manufactured in the Philipinas Islands", such as *talingas* (Ilocos blanket), table-covers, and *lampotes* (pieces of cotton canvas) which were included in the galleon trade.[59] In Sebu, Morga notes, the natives "were less given to agriculture but they are skilled in navigation.." Panay, which is located in the same middle-islands region (as Sebu) hosts natives who had primitive engineering skills – "who are masters in building all kinds of ships…[and] are highly skilled carpenters. They have no other trade than this, and though there is not a single tree of any size in all the island yet they practise this art with great competence."[60]

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[56] Antonio de Morga, *Sucesos de Las Islas Filipinas* (1609) translated and edited by J.S. Cummins. Cambridge: Cambridge University Press (for the Hakluyt Society), 1971, p. 250, 263 (Morga-Cummins, hereafter).
[57] Ibid., p. 262.
[58] bid., p. 262-263.
[59] Blair and Robertson, vol. 30, p. 64-65.

But these were all gone. In Morga's account:

> The native Indians are very far from exercising those trades, and **have even forgotten much of farming, and the raising of fowls, cattle, and cotton, and the weaving of cloth, which they used to do in the days of their paganism and for a long time after the conquest of the country** [emphasis added].[61]

Why had the natives forgotten their trades and entrepreneurial skills? Seeking to understand the myth of the "lazy native", Jóse Rizal sought to reconstruct precolonial Philippine society and culture as basis for his assessment of the impact of Spanish colonialism. He launched a nationalist project to reclaim the history of his country. He devoted a four-month intensive research of the accounts of Spanish chroniclers in the English Museum in 1889, from the coming of Magellan (Pigafetta) to the early years of the Spanish regime (Morga, Chirino, Colin, de San Agustin, Combes, etc.) and compared these with the more modern anthropological, ethno-historical, and ethnolinguistic studies of European, mostly German, orientalists.[62] He understood the causes. Rizal argued that:

> **The coming of the Spaniards to the Filipinas, and their government, together with the immigration of the Chinese, killed the industry and agriculture of the country**. The terrible competition of the Chinese with any individual of another race is well known, for which reason the United States and Australia refuse to admit them. Argensola says the same thing, and could not have copied Morga, since their works were published in the

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[60] Ibid., p. 268.

[61] Blair and Robertson, vol. 2, pp. 42-43; Antonio de Morga, *Sucesos de las Islas Filipinas* (1609). José Rizal National Centennial Commission editions of Rizal's writings, *Historical Events of the Philippine Islands*. Manila: José Rizal National Centennial Commission, 1962, p. 216. (Morga, Rizal Commission, hereafter).

[62] Morga's *Sucesos de las Islas Filipinas* (1609) was chosen by Jóse Rizal in his own work which would show the Filipinos their past. For Rizal, Morga was "one of those men of upright conscience, rare as comets, that from time to time go out to the colonies" and "who witnessed the last moments of the ancient Filipino civilization and who played a part in the coming of a new era". In annotating Morga's book, Rizal's goal was to provide his own people with a better understanding of the changes that had taken place in three centuries of Spanish rule. Morga served the Spanish colonial government as Lieutenant Governor, thereby making him second in command in the colony (Cummins 1971, p. 33).

> same year, in countries very distant from one another, and the two contain wide differences"[emphasis added].[63]

In the present parlance, politics and economics cannot be separated in any real sense and the domestic and international spheres were intimately linked. The bottom line is that Spain was not modern. Under the colonial rule, the monumental task of modernizing the Philippines was on the shoulders of the Spanish authorities. However, Spain was incapable of modernizing its colony because as Stanley reminds us, it was also "mired in an impotent traditionalism of its own." He asked, "How was Spain to lead a colony to the modernization and cultural integration that eluded it at home?"[64] There was an "absence of the spirit of progress" and "hostility to new ideas" in 16th-century Spain.[65]

The European enlightenment had a different outcome in 17th-century Spain than England. Similar with France, rationalization or the idea of "progress" and "equality" in Spain created a bureaucratic class whose idea of wealth creation was bound up with state privileges. Foremost of these privileges is the use of state office to extract surplus from the peoples. Ellen Meiksins Wood contends that this is far from being a symptom of a modernizing state (Chapter 2). It is a feature of an old regime and a fused political economic structure of a 'transitional state' "where the state and office were the primary economic resources."[66] Essentially, the interest of a non-modern bourgeois was typically expressed in the commitment to civil equality which, more often than not, meant access to state office. Thus, it was not a surprise that "financial corruption honeycombed the whole colonial civil service" and a remarkable policy failure to develop resources and to provide an environment conducive for the development of the local industry characterized the non-modern colonial government in Spanish Philippines.[67]

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[63] Blair and Robertson, vol. 2, p. 43: Morga- Rizal Commission, p. 216.
[64] Stanley, *A Nation in the Making*, p. 266.
[65] Blair and Robertson, vol. 1, p. 47.
[66] Wood, 'Capitalism or enlightenment?', pp. 413-17.

The competition for the China trade and the ambition to Catholicize East Asia constitute the thread that connects all the political actions and manoeuvrings, and produced enduring undesirable consequences on the colony. The first was unfair competition or monopolistic control of credit and marketing considerably de-motivated the locals to continue and improve their profitable pre-colonial economic activities. Unfair competition from the China trade which was funded by 'transnational' Spanish merchants and financiers in Manila and Mexico resulted in the decline of the locals' pre-Spanish trade between other neighbouring countries such as Japan, Siam, and India.[68] However, Rizal notes, "With the exception of trade with China, the relations with the other nations had ceased more than two centuries.[69] "In Morga's time, Rizal adds, the Philippines exported silk to Japan whence now [1889] comes the best quality of that merchandise."[70] Morga did not explain why the natives abandoned their trades and economic activity, "preferring to live in poverty". I would argue that the natives had control over the pre-Spanish trading activity and it was directly connected to their own productive activity. Suddenly, all these were lost. Profit – the economic motive, if you will – was no longer in the control of the natives' hands. Crop production and home-based crafts were a useless economic activity for them as profits were concentrated in the hands of the middlemen, such as the Chinese traders and the Chinese *mestizos* and *indios* who had a monopoly on local buying and selling. This monopolistic control over local trade generated ethnic hatred and violence directed against the Chinese. The hostile attitude and negative sentiments of the local people was reflected in their involvement in the occasional massacres of Chinese traders. They lodged complaints with the government stating that:

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[67] Blair and Robertson, vol. 1, p. 47.

[68] Morga-Rizal Commission, p. 305.

[69] Ibid.

[70] Rizal pointed out that China, Japan and Cambodia maintained trade relations with the Philippines before the Spaniards came, but relations with Japan and Cambodia were severed. He surmised that "The causes which ended the relationship may be found in the interference by the religious orders with the institutions of those lands." In Panay Morga took note of the many "flourishing and wealthy native settlements" of this large island. Blair and Robertson, vol. 2, p. 113-4; Morga-Rizal Commission, pp. 71, 180, 113-4, 260.

> The Spaniards advanced them [Chinese traders] money for their transactions in commerce and their traffic in the country, what they call their capital. They have obtained from the natives in the provinces everything that they wanted, they have lived quietly in the towns, they have been served in their persons, they have lived in large, comfortable houses, they have brought in whatever merchandise they wanted at prices agreeable to them, they have been paid in silver or coin according to the values which they have set for their particular transactions, all of which has been to their great profit and benefit…"[71]

The situation of the local economy had provoked debates among the liberals and the conservatives within the Spanish government. The liberals believed that the encouragement of Chinese immigrants and their subsequent dispersion throughout the colony would benefit the economy. They contended that "exposure to Chinese competition would teach the indio the value of hard work …the Chinese in every town would serve as a stimulus and an education to him [indio]".[72] Ardent conservatives decried the liberal policy, arguing that this obsession with the Chinese to provide the revenue to fill the government treasuries was a fundamental contradiction to the Spanish religious-cultural and economic obligations of protecting the *indios* from the Chinese. They deplored the policy because it was pursued "even at the cost of converting the archipelago into a Chinese colony with a Spanish flag".[73] The Archbishop of Manila, Don Carlos Bermudez de Castro, argued that the natives' failure to take over the businesses of the Chinese was not because they were lazy.[74] Moreover, Justice Calderon Henriquez argued that "it was not because the natives were useless but because the Chinese confederated among themselves so that they did not mind losing a thousand pesos to bankrupt a few men who tried to get into a new business".[75] The Chinese had ready access to credit because they were linked with Spanish capital. Such was a structure that could have been corrected had the colonial government been developmental. Second was the policy of military conquest to control the Moluccas spice trade which resulted in the decline of native population and waste of human and financial resources.[76] Third, the trading economy dominated by global merchants and financiers was a structural constraint that channelled the entrepreneurial activity of an emerging local élite to trade. The *mestizos* shifted from financing the home-based weaving industry to export-crop production when the former was no longer a viable business because of the competition from cheap imports. Morga criticized the colonial government for neglecting the development of the economy by focusing on the China trade. He took note of the many economic opportunities by which wealth could have been generated by the colonial government.[77] Evidently, a trade-based economy marginalized the development of the

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[71] Maria Lourdes Diaz-Trechuelo, 'The economic background', in Alfonso Felix, Jr. (ed.) *The Chinese in the Philippines, Vol. II*. Manila: La Solidaridad Publishing House, 1969, p. 36.

[72] Maria Lourdes Diaz-Trechuelo, 'The role of the Chinese in the Philippine domestic economy (1570-1770', in Alfonso Felix, Jr. (ed.) *The Chinese in the Philippines Vol. I*, Manila: La Solidaridad Publishing House, 1966, p. 50, 51.

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[73] Ibid.

[74] He wrote:

> …they [natives] were only allowed to work as journeyman, whereas the Chinese owned the shops and profited by them…Yet, if we only reflect, we will see that it is they [natives] who work the fields, who raise the fowl and cattle and whom the Chinese exploit…We find in this country many who are skillful and who can practice all the trades and who can supply us with all the necessary supplies but they will never be able to do this as long as there are many Chinese (Ibid, p, 192).

[75] Ibid.

[76] Blair and Robertson, vol. 1, pp. 270-271; Morga-Rizal Commission, p. 192.

[77] Morga-Cummins, p. 310.

agriculture and industry sectors. Aside from the merchants, Chinese artisans from the southern provinces of China also came to settle in the Philippines, and they brought with them technology in boat-building, furniture-making, manufacture of boilers, shoes, soap, and dyes, in smelting, masonry, and foundry working.[78] They also introduced sugar-refining technology and equipment, new construction techniques, movable-type printing and bronze making or metal working. The opportunity to build an industry using this segment of the Chinese immigrants and learn from the technologies to improve the primitive skills of the natives was not provided. The absence of modernizing Spanish bureaucrats failed to channel Chinese entrepreneurial activity into industry. Fourth, the free trade policy in Spanish Philippines dealt a devastating blow to the rural craft industry. In mid 18th century an 'enlightened despotism' in Europe led to reforms in Spain and its colony. Spain was in deep turmoil, but the liberal Spanish reformers believed that ineffective and corrupt government was the fundamental reason why revenues from the colonies were inadequate for imperial defence, and why Spanish commerce had dwindled. Strong governance was seen as the answer to this problem. There is thus no change in the arguments of present day liberal regime promoters. In large part, corruption was responsible for Spain's economic difficulties, but the major contributor to Spain's declining political power was its stagnating economy, which was characterized by lack of productivity and competitiveness, exacerbated by ten years of unsuccessful wars (with France 1793-1795 and with England 1796-1802) and the later unstoppable revolts in its American colonies.[79]

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[78] S. Fukuda , *With Sweat and Abacus: Economic Roles of Southeast Asian Chinese on the Eve of World War II*,, transl. George Hicks, first edition. Singapore: Select Books, 1995.

[79] Spain formally recognized the new Spanish American republics: Mexico (1836), Ecuador (1840), Chile (1844), Venezuela (1845), Bolivia (1847), Costa Rica (1850). Nicaragua (1851), Argentina (1859), etc.

Many scholars have described Spain's economy as backward and failed industrialization. As one author notes, Spain's failed industrialization was based on its "inability to reproduce the English model" of industrialization; among the contributing endogenous factors were backward Spanish agriculture and a lacklustre industry."[80] Reinert (2007), however, points out that Spain's policy is a "frightening example of *what* not *to do*." He notes: "The discovery of the America's led to immense quantities of gold and silver flowing into Spain. These huge fortunes were not invested in productive systems but actually led to the de-industrialization of the country."[81] England was already producing goods at a record high productivity with the introduction of machines and factories, thus Spain's and its colonies' trade-based economy could not compete on an equal footing (see sub-section 3.3). Spanish intellectuals "believed that the only way to pull their huge yet impoverished empire together was to make each and every part of it contribute to the whole the commodities it could best produce or manufacture."[82] In other words, these intellectuals believed comparative advantage could draw Spain from the economic quagmire. But trade is based on the premise that those economies engaged in trading have a production sector competitively producing whatever product they could manufacture. This was not the case in Spain and Spanish Philippines. Even before the English-Spanish war, Horacio de la Costa points out, there were those in the Spanish bureaucracy who believed that some radical change in the structure of Philippine trade was necessary to meet the altered conditions of world trade.[83] One of the main reasons for the change was the steep competition that Asian products encountered with those produced from Europe. As de la Costa argues: "It would seem, then, that the old system of buying cheap from Asia and selling dear to America, which is what the galleon trade was in essence, had seen its day...The Philippines could not continue merely as a center of transhipment and survive."[84] To correct the problem, the Spaniards created the Economic Society of Friends of Manila (*Sociedad Económica de Amigos del País de Manila*) in 1781 to encourage local enterprise. It helped to establish a traditional textile industry by installing 300 looms for tapestry and cloth production for domestic consumption. The industry produced quantities of blue-and-white checked cloth, and 50-60,000 blankets between 1785 and 1795 in the hope of gaining a share of the profits of Asian trade for Spain, at that point dominated by the Dutch, English, and French. The new economic policy promoted an agrarian economy and home-based or artisan handicraft and service activities such as spinning and weaving of cloth, processing and milling of rice, the manufacture of assorted implements, and so forth.[85] The production of cash crops for export, such as indigo, sugar, abaca, rice, maize, cocoa, spices, cotton and tobacco, was intended to increase revenues for the government. It was during this period that *haciendas* emerged: large tracts of land devoted to agricultural production for export.[86] Indigo or *añil*, a dye, which was sought after by the European textile industry, was a much desired product. Basco also promoted increased activity in mining iron, copper and gold. In the hand-woven textile industry, Maria Lourdes Diaz-Trechuelo notes that Ilocos' beautiful woven cotton cloth was highly priced in Mexico; Laguna produced excellent stockings, and specialized handkerchiefs and ribbons were produced in Tondo. All these goods were made "by those whom the Spaniards called useless natives".[87] Clothing made from natural fibers, such as *sinamay, jusi,* and *piña,* had entered the international market and achieved remarkable levels of volume and sophistication. For example, the local weaving industry accounted for a total of $720,500 in 1855.[88] Impressed by the variety of natural fiber materials and colors that were produced, a French scholar who made a systematic survey of the Philippine weaving industry remarked: "the combination of their designs and colours is so bright and varied that they have the admiration of the whole world".[89] Even the English vice-consul, Nicholas Loney, was not oblivious to the thriving industry, as indicated in his consular report of April 1857.[90]

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[80] Leandro Prados de la Escosura, 'Economic growth and backwardness, 1780-1930', in José Alvarez Junco and Adrian Shubert (eds.) *Spanish History Since 1808*. London: Arnold, 2000, p.p. 179-190.
[81] Erik Reinert, How *Rich Countries Got Rich ...and Why Poor Countries Stay Poor*. New York: Carroll and Graf Publishers, 2007, p. 84.
[82] Ibid., p. 108.
[83] De la Costa, p. 106.

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[84] Muñoz y San Clemente, 'Reflexiones sobre el commercio', p. 107.

[85] Stephen A. Resnick, 'The decline of rural industry under export expansion: a comparison among Burma, Philippines, and Thailand, 1870-1938', *The Journal of Economic History* 30 (1), The Tasks of Economic History (March 1970), pp. 51-73.

[86] M.D. Litonjua, 'Outside the den of dragons: the Philippines and the NICs of Asia', *Studies in Comparative International Development* 28 (4), 1994, p. 8.

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[87] Diaz-Trechuelo, 'The role of the Chinese', p. 197.

[88] Alfred McCoy, 'A queen dies slowly: the rise and decline of Iloilo City', in Alfred McCoy and Ed C. de Jesus (eds), *Philippine Social History: Global Trade and Local Transformations*, Honolulu: University of Hawaii, 1982, p.302.

[89] Mallat (1846), as cited in McCoy, 'A queen dies slowly: the rise and decline of Iloilo City', p. 302.

[90] Letter from Nicholas Loney to Farren (1857) cited in McCoy, 'A queen dies slowly: the rise and decline of Iloilo City', p. 303:

> Considering that the Philippines are essentially an agricultural rather than a manufacturing region, the textile productions of Iloilo may be said to have reached a remarkable degree of development. Nothing strikes the attention at the weekly fairs held at the different towns more than the attendance of the native-made goods offered for sale; and the number of looms at work in most of the towns and villages also affords matter for surprise. Almost every family possesses one or two of these primitive-looking machines, with a simple apparatus formed of pieces of bamboo. In the majority of the houses of the mestizos, and the more well-to-do Bisayans, from six to a dozen looms are kept at work. I have heard the total number in this province computed at 60,000, and though these figures may rather over-represent the actual quantity, they cannot be much beyond it. All the weaving is done by women whose wages usually amounted to between 75 cents and $1.50 per month. In general — a practice unfortunately too prevalent among the natives in every branch of labour — these wages are received for many months in advance, and the operatives frequently spend years — become in fact virtually slaves for a long period — before paying off an originally trifling debt. There are other work-women employed at intervals to "set-up" the pattern in looms, who earn between $1 and $1.50 per day in this manner. I should add that Capiz and Antique produce in a lesser degree than Iloilo a proportion of manufactured goods.

However, the 'infant' local industry practically vanished. The free trade regime established by the colonial government simply had the local economy flooded with imported goods made available by Chinese merchants to the remotest towns and villages. An open economy that did not integrate policies to help build a fledgling local industry was a recipe for destruction. The liberal regime adopted by the Spanish reformers exposed the local industry to foreign competition at a time when Britain was producing its cotton goods using advanced mechanical technologies, which enormously improved its productivity. The primitive industry, of course, could not compete. All these incoherent policies were neatly captured by Francisco Xavier Salgado in his letter to Antonio Porlier in 1769. He points out that during his more than three decades of stay in the country, there were many obstacles he thought were hindering development: (1) the citizens lack capital; (2) those who do have capital employ it in nothing but imported goods, whether for re-export on the galleon or for sale in the domestic market; (3) security risks for investors outside of Manila; (4) underdeveloped transportation and communication problems of an archipelago.[91] The result of the policy failure was the absence of a productive sector and a dynamic domestic market for about 2.5 million Filipinos in mid 18th-century. The severely-affected putting-out system brought economic destitution for thousands in the traditional weaving villages. Local capital, particularly from the Chinese *mestizos* shifted from textiles to commercial agriculture, which displaced the entrepreneurial skills and labour of the weaving industry. The rich *mestizos* and *indios* were quickly absorbed by the rapidly expanding commercial sugar production in nearby Negros Province. Fifth, the élitist and traditional educational system in Spanish Philippines prevented the development of innovative culture. Margaret Jacob argues that

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[91] Francisco Xavier Salgado to Antonio Porlier, Manila, 4 December 1769, in de la Costa, pp. 110-112.

"where science remained suspect or suppressed in Catholic countries, as occurred in Catholic Europe, relative intellectual stagnation in science was the price to be paid."[92] As part of the reforms, the Spanish government promoted a scientific approach to agricultural and craft-based production in mid 18th- century Philippines, but this did not 'take off'. Cushner notes that "The Society had regular meetings and made proposals and suggestions. It offered prizes to cultivators, farmers, and inventors. But unfortunately no one seemed to pay any attention".[93] While the locals' response could be due to the monopolistic trade which renders production unprofitable, one possible reason that industry and scientific crop production did not fly was because of an élitist colonial educational system where the objective was "not general enlightenment" so much so as "social refinement and distinction."[94] The development of an inquisitive mind was not pursued among students because of the church's fear of losing their grip on their consciousness when modern science is embraced. It was the opposite of what occurred in modernizing England where the cultivation of a critical mind, a preference for empirical knowledge and distrust for dogmatism were promoted. This will be discussed alongside the development of local political and intellectual elites.

3.2 The genesis of the local politico-ethical elite

This section discusses the beginnings of the Filipino political and intellectual elite in 19th century Philippines, known as the *ilustrados*. Forged in the crucible of local

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[92] Margaret C. Jacob, *Scientific Culture and the Making of the Industrial West*. New York and Oxford: Oxford University Press, 1997, p, 19.
[93] Cushner, *Spain in the Philippines*, p. 194-195.
[94] Antonio Isidro, Juan C. Canave, Priscila S. Manalang and Matilde M. Valdes. *Complusory Education in the Philippines*. Paris: UNESCO, 1952, p. 13.

responses to Spanish colonial expansion and enlightenment rationalism, they were fragmented not only economically but also ideologically. Some were cosmopolitan in their outlook, lacking any form of nationalist sentiment, and thus unable to establish a 'vital link' with the poor and the dispossessed of the country. From this group would emerge the political and bureaucratic leaders who would later become part of the American colonial political structure. Others were steeped in nationalism and allied with the *Katipunan* [Society], a popular nationalist movement which reached its apogee in the 1896 Philippine Revolution. The more than 300 years of Spanish colonial abuse and maltreatment was the womb that fostered Filipino nationalism. The 'un-forming' and 're-forming' effects of colonialism[95] engendered a fragmented Filipino political and intellectual élite, which bear significance to the present development malaise. Colonialism and the unique cultural and geographical situation of the Philippines prior to colonization engendered "a paradoxical development" which was a contrast to the development of nationalism and culture in other parts of Asia.[96] Unlike some Asian countries, such as Japan, the Philippines at the time of conquest lacked national identity and a national ruling élite.[97] The Islands' "political and social organization was deficient in cohesion".[98] Moreover, cosmopolitanism was promoted in the education system.[99] One of the unfortunate results of these factors combined was the formation of a fragmented élite. The cosmopolitan segment which became part of the subsequent

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[95] Ania Loomba, *Colonialism/Postcolonialism: The New Critical Idiom*. London and New York: Routledge, 1998, pp. 2, 185.
[96] Wickberg, *The Chinese in Philippine Life*, p. 132-33.; Trevor Hogan, 'In but not of Asia: reflections on Philippine nationalism as discourse, project and evaluation', *Thesis Eleven* 84, February 2006, p. 115.
[97] Wickberg points out that in some other Asian countries the contact between "Western political pressure and cultural influence eventually produced new, culturally marginal élites, who sought to harmonize in a national framework the intellectually attractive institutions of the West and refurbished version of their own, emotionally valued indigenous tradition" (Wickberg, *The Chinese in Philippine Life*, p. 132-33).
[98] Blair and Robertson, vol. I, p. 38.
[99] Thomas, 'Orientalist Thought', pp. 35-53.

American colonial rule lacked nationalist sentiment which, Filomeno V. Aguilar argues, informed their "pro-imperial-cum-anticolonial politics".[100]

Education was dominated for centuries by the friars and its content was to cultivate a religious culture.[101] It was in the hands of the Jesuits and the Dominicans that the friars' influence on education "was for a long time almost total."[102] The religious orders took total responsibility for providing and financing higher education in the Philippines. University education which was in the hands of the Dominicans (University of Santo Tomas founded in 1611) was caught in the political struggle and the church's attempt to "contain the dangers of modern science". As Thomas points out, the "fundamental conflict between church doctrine and modern knowledge" left the university education system in an "awkward predicament: they needed to assimilate the new sciences and disciplines into the university without giving up its Catholic nature." This inherent contradiction left the Spanish educators, on the one hand, "preoccupied with touting the advancements in teaching science that the university was making" and, on the other hand, "many of them went to great lengths to undermine the philosophical bases of modern science." They ended up "mocking the ideas of the new sciences" or "asserting the supremacy of Catholic theology over all other branches of knowledge."[103] The poor quality of instruction in the natural and physical sciences in the university was described by one of its alumni, Rizal. The science laboratory was there for display to be shown to foreigners and high officials from Spain, not for learning. [104] Higher education at that time was "a system characterized by élitism, church control, and culture orientation", and it was used as a tool for the hispanization of the élite – students were required "to act, dress and speak like the Spaniards".[105] Filipinos were denied access to western literature, according to Stanley, for fear that this might expose the population to unhealthy thoughts. Spanish conservatives considered that those who took their higher education in Europe were likely to become *filibusteros*, agitators for change.[106] Those who aspired to become engineers had to go to Europe, mostly to Belgium.[107] The only modern secondary school in the country was the Jesuit-run *Ateneo Municipal de Manila* which taught basic arithmetic, algebra, geometry, trigonometry, elementary science, geography, poetry, history, rhetoric, philosophy, Latin, and Greek. The Spaniards had introduced higher education for men long before a nationwide elementary and secondary school system was established in 1863.[108] By the 1880s more than 10,000 males mostly sons of the rich had enrolled in secondary schools and those wealthiest sent their sons to European universities.[109] A report by the Schurman Commission indicates that there were only 1,914 teachers who served a total population of 6,709,810 in the concluding years of Spanish rule; a census in 1903 revealed that about 56 percent of the population

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[100] Filomeno V. Aguilar, Jr., 'Tracing origins: ilustrado nationalism and the racial science of migration waves', *The Journal of Asian Studies* 64 (3), 2005, p. 630.

[101] Arthur L. Carson, *Higher Education in the Philippines*, Bulletin 1981, No. 29. Washington: US Government Printing Office, 1961.

[102] Renate Simpson, 'Higher education in the Philippines under the Spanish', *Journal of Asian History* 14 (1), 1980, p. 1.

[103] Thomas, 'Orientalist Enlightenment', pp. 60-61.

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[104] José Rizal, *El Filibusterismo*, translated by Leon Ma. Guerrero. London and Hong Kong: Longmans, 1965, pp. 93-94.

[105] Thomas, Oriental Enlightenment', p. 49-50.

[106] Stanley, *A Nation in the Making*, p. 33.

[107] UNESCO (United Nations Educational, Scientific and Cultural Organizations), *National Science Policy and Organization of Research in the Philippines*, Paris: UNESCO, 1970, pp. 9-10.

[108] The enrolment in primary schools increased after the reforms of 1868. These reforms instituted by the liberal government constituted four directives: establishing normal schools to train female teachers, training lay male teachers, broadening the curriculum beyond religious instruction, and requiring Spanish to be taught in the schools. In the 1890s nearly 200,000 children attended, and in 1892 there were 2,137 public primary schools in the Philippines (Judith Raftery, 'Textbook wars: Governor-General James Francis Smith and the Protestant-Catholic conflict in public education in the Philippines, 1904-1907', *History of Education Quarterly* 38 (2), Summer 1998, p. 148).

[109] Glenn A. May, *Social Engineering in the Philippines: The Aims, Execution and Impact on American Colonial Policy*. Westport, Conn: Greenwood Press, 1980, p. 78.

10 years of age or older could neither read nor write in any language or dialect.[110] Deliberately keeping the majority of the people in a state of ignorance by severely limiting educational opportunities and suppressing the dissemination of new ideas hindered the establishment of a culture of science and innovation in the Philippines, which is crucial to modern transformation. Tirades against modern science discouraged material pursuits. Take for, example, Fr. Matias Gomez Zamora's comments: "So also anti-Christian modern philosophy has torn up the bowels of knowledge... abandoning herself completely to her idol...And who is her idol, gentlemen, who... Don't you know? ...It is clear enough: materialism saturated with pride, or, if you prefer, pride saturated with the material." Ironically, the contradictions in advance education eventually contributed to the emergence of "nationalist thought which was so to hurt Spanish interests in the Philippines."[111]

How was cosmopolitanism intertwined with the formation of a Filipino state class engaged in what Aguilar calls "proimperial-cum-anticolonial politics"? The *encomienda* was a colonial political economic and administrative institution established for exacting tribute from the natives in return for the *encomendero's* undertaking to defend his region against internal or external disorders.[112] The Spanish authorities adapted a pre-Spanish indigenous social organization that was primarily decentralized and based on kinship, marriage or dependency called *barangay*; this became "the cornerstone of local government".[113] A *barangay* was typical of an Asiatic society characterized by small, self-contained, scattered agriculture and fishing village communities consisting of 45 to 50 families. There were about 6,000 *barangays* existing in 1768.[114] A *barangay* was ruled by a *datu*, a traditional leader whose position was ordinarily hereditary but might be obtained by force, wealth, and wisdom. This *hispanized* societal form of organizing the relations of domination and exploitation was fused in the state-building process to hasten pacification. The duties of the *encomenderos* were not only to dispense political functions, such as maintaining order, enforcing laws, exercising criminal and civil jurisdiction, but also to support the priests, build churches, and diffuse Spanish culture. In fact, the *encomienda* embedded the Spanish friars in the evolving Philippine state-society complex. Unlike in Spain, the friars wielded enormous power and were influential in both governance and pacification processes. The clergy played a crucial role in the pacification process through religious consciousness. John Phelan reminds us that Philip II, influenced by the Dominican theologian, Francisco Vitoria, was clear in his instructions to the Legazpi expedition of a bloodless pacification of the archipelago.[115] Quibuyen points out that "the history of the Philippines is replete with peasant rebellions (on the average one every two years throughout the 300 years of Spanish rule) that sought to overthrow the clergy and the landed elites."[116] In the local uprising of peasants against the *principales* in northern Philippines, such as the Sarrat revolt in March 3, 1815, where farmers stormed government offices and killed some *principales*, the priests' mediation led to an end of the revolt and set the *principales* free.

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[110] Stanley, *A Nation in the Making*, p.32.
[111] Thomas, 'Orientalist Thought', p. 73.
[112] Renato Constantino with Leticia Constantino, *A History of the Philippines: From the Spanish Colonization to the Second World War*. New York and London: Monthly Review Press, 1975, p. 44. In Cummins edition of the *Sucesos de las Islas Filipinas*, Cummin defined encomienda as "the right of Spaniards to collect tribute tax from Indians within a certain district in return for temporal and spiritual protection" (p. xi).

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[113] Phelan, *The Hispanization of the Philippines*, p. 15.
[114] Ibid., p. 122.
[115] Ibid., p. 9.
[116] See Floro C. Quibuyen, 'Imagining the Nation: Rizal, American Hegemony and Philippine Nationalism', PhD Dissertation. University of Hawai'i, 1996, p. 11.

In most cases parish churches became sites of civil administration. The early ascendancy of the friars over the state in the Philippines was the result of the confluence of several factors. This is, of course, consistent with the religious and political arrangement between Vatican and Spain. However, it was due to the scarcity of official administrators that Spanish friars increasingly assumed government functions, such as inspection of schools, taxation, prisons, public works, censoring of budgets, plays, comedies, auditing of accounts, etc. Eva-Lotta Hedman and John Sidel claim that the Catholic Church hierarchy has been one of the pillars of "a bloc of dominant social forces in Philippine society" right up to the present day.[117] As an administrative system established on a primitive economy, the *encomienda*, essentially, rather than changing the social structure, merely maintained the fused political and economic powers of the feudal local aristocracy who were part of the colonial apparatus. The *encomenderos* mostly resided in the cities so that they delegated their functions to the local nobilities or chieftains (*datus*). As local political administrators, Phelan argues, "The native magistracy acted as intermediaries between the material demands of the Spanish regime and the productive capacities of the masses".[118]

The introduction of private property and surplus production by the Spanish (through forced labor) and the gradual adoption of this innovation by the local magistracy transformed the relationship into exploitation. The local offices became the venue by which the local élites participated in the exploitation of their own people, and enriched themselves in the process. The transformation from communal property and subsistence into private property and surplus production created 'economic inequality' among the native communities, and "the cleavage became both political and economic".[119] When the Spaniards introduced the notion of private property as opposed to communal land use, the local nobility assumed formal ownership of lands cultivated by their dependents, and this trend increased in the 17th century. Private property ownership introduces the idea that land itself is a source of wealth, and it was through land ownership that they perpetuated their dominant status, and control of local politics. Thus, although it may not be true in all cases, possession of wealth based on land properties and participation in the local administration tended to coincide. The abolition of the *encomienda* system coincided with the reforms of the Bourbon monarchs in the mid 18th century.[120] During this period, absolutism in Europe underwent some changes so that the term 'absolute monarchy' gave way to 'enlightened despot' (a monarch who ruled according to enlightened principles rather than the divine right of kings). Strong nation-states were built under the auspices of the monarchies and they assumed greater control over all aspects of the state; they were mercantilists developing the resources of their kingdoms, and alongside this process was the development of the interrelationships between administrative, economic, and political factors; this led to the emergence of the state class, comprising of aristocrats and royal officials, trained as professionals.

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[117] Hedman and Sidel, *Philippine Politics and Society,* p. 13

[118] Phelan, *The Hispanization of the Philippines*, p. 119-120.

Enlightened despotism, especially during the reign of Charles III (1759-88), motivated Spanish authorities to create a "more rational, efficient, and uniform system of imperial administration" so that other units of local government were created.[121] Phelan argues that part of the 'modernization' of the political organization was the introduction of election for a minimum term of three years, instead of leadership in the *barangay* following the principles of hereditary succession; this gave rise to a Hispanized Filipino political system.[122] It is worthy of note that modernization was equated with centralization and electoral institutions rather than the creation of a strong and capable bureaucracy. Moreover, 'modernization' was focused on state apparatus rather than on the economy.[123] The *indios* took their local politics seriously, with some politicians vigorously pushing their candidacy for the office of *gobernadorcillo* to the point of holding 'political rallies' and wooing voters through fiestas in which entertainment and rice wine were supplied by aspirants to office.[124] Phelan notes, "the Filipinos were rapidly responding to some Hispanic political practices".[125] The enthusiastic response was expected given that ascendancy to public office meant possessing that property in the means of coercion to give them access to socially produced surplus. In a transitional state, unlike a modern or capitalist state, the power to extract surplus has been located in government office. In fact, this may explain the high incidence of violence during elections in the Philippines up to today as the ruling élites compete for the means to power and riches in the public rather than in the private sphere.[126] Their positions in public office provide them opportunities for extra legal enrichment and also power over their people. Where the *principales* involved in running town offices as *gobernadorcillos* were neither necessarily men of means nor politically influential, they were, as Glenn May refers, "political surrogates".[127] By examining municipal elections in the late 19th century in Batangas Province, May observes that political power resided among the "protagonists" or "power brokers", coming from various factions of interests, such as economic, religious, and anti-clerical or anti-Spanish. Most of them possessed proprietary wealth through money lending, landownership, and marketing of commercial crops. Even though they did not seek public office themselves, their control of the municipal office through their surrogates ensured, as May points out, their control of tax collection, law enforcement, distribution of public works, and monopoly of franchises.[128] The political economic system established by the Spanish colonial government generated an upper class coming from the local magistracy, known as the *principalia*. Other than the *gobernadorcillo*, the members of the upper class included the bureaucrats, such as the deputy, a constable, an inspector of palm trees, an inspector of rice fields, and a notary; those in the service of the church, such as the *fiscales* (the *sacristans*) and the cantors of the choir were also part of the upper class and enjoyed the statutory privileges of the *cabezas*. [129] The *principalia* was composed primarily of the Chinese *mestizos* and the rich *indios*, the precursor of most of the *ilustrados*. It is important that we understand the social conditions surrounding the emergence of the wealthy and landed Chinese *mestizos* and native *indios* because they later would form the country's local ruling élite, the

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[119] Constantino, *A History of the Philippines*, p. 52.
[120] There was no exact period given for the abolition of the private *encomienda*. However, Constantino points out, there was a decline in their number by the middle of the 17th century and in 1721 a *cedula* provided than *encomiendas* that fell vacant were not to be assigned to private persons but were to revert to the Crown.
[121] Phelan, *The Hispanization of the Philippines*, p. 123.

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[122] Ibid., p. 133.

[123] The centralization of governance was facilitated by subdividing the archipelago into several *alcaldias* (districts) governed by *alcaldes mayores* (governors of the province) who were Spaniards. Pueblos which became the forerunner of *municipios* were governed by *gobernadorcillos* (petty governor). The *pueblos* reflected the power structure in Spanish Philippines – the secular bureaucracy and the Catholic Church – whose seat of power is located in the main town square, *poblacion*. Greg Bankoff, 'Big fish in small ponds: the exercise of power in nineteenth-century Philippines', *Modern Asian Studies* 26 (4), October 1992, p. 680.

[124] Phelan, *The Hispanization of the Philippines*, p. 124.

[125] Ibid., p. 37.

[126] See, for example, John Sidel, *Capital, Coercion, and Crime: Bossism in the Philippines*. Stanford, CA: Stanford University Press, 1999.

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[127] Glenn May, 'Civic ritual and political reality: municipal elections in the late nineteenth century', in Ruby Paredes (ed.) *Philippine Colonial Democracy*, Monograph Series Number 32. New Haven, CT: Yale University Southeast Asia Studies, 1988, pp. 21-28.

[128] Ibid., p. 24.

[129] Phelan, *The Hispanization of the Philippines*, p. 124. The privileges of the *cabezas* and other members of the *principalia* included, among other things, exemption from paying the annual tribute as well as from participating in compulsory labor projects. They also enjoyed certain honorific tokens of prestige such as the privileges of using the Spanish 'Don'(p. 122).

ilustrados. Their rise was interlinked with the imperialistic aims of Spain engaged in a dynamic relationship with the Chinese world system. Wickberg points out that "assimilation was a constant process throughout the period of Spanish rule."[130] From the beginning the Spanish establishments in the Philippines were "a mission…founded and administered in the interests of religion."[131] The objective was "to Catholicize and hispanize the peoples", and this of course included the Chinese in the country. The friars' long-term goal was to convert Asian peoples, especially the Chinese and Japanese, to Catholicism with the Philippines as the base.[132]

However, this attempt at cultural assimilation of the Chinese had little success.[133] This is not surprising because Chinese identity based on Confucianism does not admit cultural equality with "barbarians" as expressed by China's self-image as *Zhongguo* (the Central Kingdom).[134] Europe was an outsider to the Chinese world cultural system, not the other way around.[135] In 17th century or earlier, Spanish policy shifted towards encouraging Chinese and native women marriages as a "first step toward assimilation", thereby creating a *mestizo* progeny that was hispanized, Catholic, and pro-Spanish. By 1810 there were about 120,000 *mestizos* in a total Philippine population of 2.5 million.[136] Spain's goal of creating a hispanized wealthy local people loyal to Spain had been finally achieved with the emergence and increasing presence, socially and politically, of the new local landed élites in mid 18th century. This meant that the Spanish government no longer had to rely so much on an economy dominated by the culturally 'uncompromising' Chinese. As the native aristocrats' economic and political standing increased, they became more closely associated with the colonial power and became "pillars of colonial administration and intermediaries between the rulers and the ruled".[137] They were the richest and politically dominant in the provinces and sought to maintain their being different as more hispanized and pro-Spanish than the *indios*. There was prestige associated with the *mestizo* culture, and being a *mestizo* was a status symbol.[138]

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[130] Of course, I recognize the racist attitudes of the Spanish government and people toward the native people of the Philippines. See Paul A. Kramer, *The Blood of Government: Race, Empire, the United States, & the Philippines*. Chapel Hill: University of North Carolina Press, 2006.

[131] Blair and Robertson, vol. 1, p. 48-49.

[132] Blair and Robertson, vol. 30, p.

[133] See Santiago de Vera et al., 'Memorial to the Council by Citizens of the Filipinas Islands,' 26 July 1586, Blair and Robertson, vol. 6, p. 195-196.

[134] See, for example, Suisheng Zhao, *A Nation-State by Construction: Dynamics of Modern Chinese Nationalism*. Stanford, CA: Stanford University Press, 2004.

[135] Bjork, 'The link that kept the Philippines Spanish', p. 30. Sahlins points out that the Chinese emperors understood the "gifts" that the Europeans presented to the Chinese court and the English embassies' intention, for instance, to establish trade as "tributes", indicating the 'barbarians' sincere desire to turn to civilization. See Sahlins, 'Cosmologies of capitalism', pp. 1-51.

[136] Wickberg, *The Chinese in Philippine Life*, pp. 20-21

It was the landed Chinese *mestizos* and native *indios* that benefited enormously when the free trade regime was established by English authorities in 1762 and further strengthened in 1766 by the Spanish colonial government under the sphere of English influence. An export-crop economy was established and this new form of wealth based on ownership or control of large tracts of plantation, and the adoption of relatively sophisticated Spanish culture became the new standards of prestige and social mobility – a "filipinized Hispanic culture" emerged. The 'distinctive' élite culture shared by the wealthy Filipinos was also experienced in education. As the newly-rich *mestizos* and *indios* and those who were not as wealthy as the *caciques* of the provinces sent their sons to Manila for education "a small but highly important professional group, whose membership transcended ethnic lines developed in Manila." An educated élite was formed where "identity of professional interest and attitude was more important than differences in culture practices." Moreover, Mexican independence forced Spain to have closer links with the Philippines, and the opening of the Suez Canal in 1869 and steamship technology made travel between Europe and the Philippines speedier. These factors brought new liberal ideas and cultural influences into the colony as aspiring *ilustrados* educated in Europe became important sources and transmitters of Enlightenment ideas from Europe then to Manila and to the local regions.[139] Liberal ideas, such as individual liberty, universal equality, and free markets took root in Manila's educational centers.

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[137] Stanley, *A Nation in the Making*, p. 52. The Chinese *mestizos* were possessed of a "mestizo cultural outlook". They were distinct from the *baba* of Malaysia or the *perenakan* of Java in the sense that they were "not a special kind of local Chinese" but were a "special kind of Filipino." A *mestizo* identifies himself/herself more with the Philippines than with China. They spoke Spanish and the local dialect, and wore mestizo/a style clothes. Generally, they were regarded to "love ostentation and devotion to Catholicism and to Spanish culture."

[138] Wickberg, *The Chinese in Philippine Life*, pp. 31-34.

We need, however, to recognize that the *ilustrados* were not a homogeneous group. Floro Quibuyen argues that the term *ilustrado* could not be used as a class concept because not only were the *ilustrados* heterogeneous in economic background, but a great division in ideological or political commitments existed among them. Political and ideological division existed among the most prominent of the *ilustrados* in the Propaganda Movement — José Rizal, Marcelo H. del Pilar, and Graciano Lopéz Jaena — than say, for example, Rizal (the recognized moral and intellectual leader of the Movement) and Andrés Bonifacio (the Great Plebeian) who was the leader of the *Katipunan*, a mass-based revolutionary group led by petty clerks, laborers, and artisans in Manila.[140] Quibuyen argues that the extremely wealthy among the *ilustrados* belonged to the far right of the political spectrum among the Filipinos, and they were cosmopolitan in their outlook. This highly privileged local élite never advocated independence and were the first to shift their allegiance to the US when it became clear that the Revolution had been defeated. The first Filipino members of the Philippine Commission, which governed the Philippines after the American conquest, came from this wealthy and conservative sector – Jose Luzuriaga, Trinidad H. Pardo de Tavera, Benito Legarda – and so did the rest who filled the native slots in the American colonial bureaucracy. Other *ilustrados*, though not as wealthy, had enough means to study in universities, locally or abroad, and eventually became the country's first professionals (doctors, pharmacists, lawyers) and businessmen. These *ilustrados* became active participants of the revolution, such as Generals Antonio Luna, Jose Alejandrino, Edilberto Evangelista, Mamerto Natividad, Miguel Malvar, Pio Valenzuela, Vicente Lukban, and of course, Rizal's brother, Paciano, etc. They were nationalist to the very core, unlike their richer counterparts.[141] In this study I use the political/ideological categories 'cosmopolitan' and 'nationalist' *ilustrados*, rather than ethnic and class categories.

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[139] Ibid., p. 130.

[140] Quibuyen points out that studies of other prominent scholars, such as those by Schumacher (1973), (1978), (1991); Palma (1949); Ikehata (1968) who had undertaken investigations of Rizal's life based on his writings, correspondence, and political projects (e.g. the *Liga*), as well as personal testimonies of people who knew Rizal and his politics indicate that he was revolutionary and was for the eventual separation of the Philippines from Spain. These works, accordingly, presented a powerful critique of the well-respected Filipino scholars', Renato Constantino and Teodoro Agoncillo, works.

The modern world came to Spanish Philippines haltingly with the penetration of western commerce toward the end of the 18th century and produced stultifying effects on the lives of the people. Ideas of nationalism as perceived by the peasants, middle class and *ilustrados* in terms of their own experiences in a rapidly changing world solidified into a hegemonic nationalist movement, the *Katipunan* (Society), which culminated in the 1896 Philippine Revolution – the first anti-colonial democratic revolution in Asia. The period from 1892 to 1902 was an historical moment in Philippine national history when Spanish colonialism resulted in the formation of the **Filipino nation.** In his path-breaking work, *Pasyon and Revolution*, Reynaldo Ileto brilliantly showed the connection between a 'folk tradition', *pasyon*, and the 1896 Philippine Revolution. He argues that the Catholic-church-approved epic of Christendom that was said to replace the declining native epic traditions in the 16th and 17th centuries; "continued to maintain a coherent image of the world" of the Filipino masses and that although the *pasyon* "appears to be alien in content" it "reveals the vitality of the Filipino mind".[142] The *Pasyon* frame was "the native appropriation of [the] Judeo-Christian theme" and "provided the masses with a coherent framework for interpreting and changing their world."[143] Building on the works of Ileto and others, Quibuyen argues that the process of national formation in the later part of 19th century was made possible through a grand narrative of emancipation which comprised of two strands of counter-hegemonic narratives: the Enlightenment narrative(s) of the nationalist *ilustrados* and the *Pasyon* narrative of the popular masses;it was "used by the Spanish colonizers to inculcate among the Indios loyalty to Spain and Church" but it also had an unintended consequence of providing the "lowland Philippine society with a language for articulating its own values, ideals, and even hopes of liberation."[144] In his own study, Quibuyen strongly asserts that it was Rizal's moral and intellectual leadership and through Andrés Bonifacio's and the *Katipunan's* organizational leadership on the ground that the hegemonic nationalist project which had reached its apogee in the revolution of 1896 was established, no matter how short-lived it was.[145] The idea that because "the nation was … embodying a sacred covenant between moral individuals… the means with which to fight for the nation, a sacred end, have to be moral and sacred as well." It was this nationalist sentiment shared by the nationalist

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[141] Ibid., p. 68.

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[142] Reynaldo Clemeña Ileto, *Pasyon and Revolution: Popular Movements in the Philippines, 1840-1910.* Quezon City: Ateneo de Manila University Press, 1979, p. 16.
[143] Quibuyen, 'Imagining the Nation', p. 417.
[144] Ibid., pp. 15-16.
[145] Ibid., p. vi.

ilustrados and the masses which became the 'spirit of the national revolution' whose end-goal was to recover what was lost because of colonialism. Quibuyen argues that "it was by this conjuncture of sentiments – the *ilustrados'* and the folk's – that the nationalist tradition became truly national-popular in the Gramscian sense."[146] Bonifacio's manifesto was largely informed by Rizal's historical work. Written in the form of *pasyon*, Bonifacio's manifesto begins with pre-Spanish period where a flourishing indigenous society existed, and emphasized the negative impact of colonialism. A call to action among the Filipino folks was also deployed appealing to their reason.[147] Isabelo de los Reyes claims, based on interviews of hundreds of Katipuneros in 1898, "that the *Katipunan* was an association to be feared, because it was composed of common ignorant people, yet although the plebeian thinks little, for this little he will die before giving it up." Later on, he would reiterate this point more emphatically:

> I have said and I will repeat a thousand times, that the Katipunan was a plebeian society: that is certain. But never have I wished to say that it was insignificant; on the contrary, the people speak little and perhaps think little, and I wish to say, perhaps without the artificial complication of a cultivated intelligence, but the little they think is intense, forms their second nature, and that which they believe is their faith, is fanaticism in them and worked miracles, moves mountains, creates new worlds and other prodigies.[148]

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[146] Ibid., pp. 418.

[147] What should be done, then? The sun of reason that shines in the East clearly show, to our eyes long blind, the way [*landas*] that must be taken; its *liwanag* [light] enables us to see the claws of those inhuman character who brought us death. Reason [*katwiran*] shows that we cannot expect anything but more and more hardships, more and more treachery, more and more contempt, more and more enslavement. Reason tells us not to waste our time waiting for the promised *ginhawa* [prosperity] that will never arrive. Reason tells us that we must rely upon ourselves alone and never entrust our right to life to anybody. Reason tells us to be one in *loób* [sentiment], one in thought, so that we may have the strength in finding that evil reigning in our land (Based on Ileto's translation, *Pasyon and Revolution*, p. 106).

[148] Isabelo de los Reyes, 'The Katipunan: Origins and Development', 7 July 1898, in John R. M. Taylor, *The Philippine Insurrection Against the United States: A Compilation of Documents with Notes and Introduction*, 1971-73, vol. 1, pp. 209-20, cited in Ileto, *Pasyon and Revolution*, pp. 99-100.

Rizal's broader understanding of nationalism made him resist a total embrace of the *Pasyon's* redemption narrative or the nationalist *ilustrados'* narrative of independence. His hesitation was because he knew deeply in himself that a nationalist project whose only aim is an independent state was doomed to fail to truly liberate the Filipino people. [149] During his trial for treason, Rizal made a distinction between being free and being independent: "…many have taken my phrase "to enjoy democratic rights" for "to have independence", two entirely different things. A people can be free without being independent, and a people can be independent without being free."[150] For Rizal a free nation is first attained at the spiritual and moral level. In other words, Rizal problematized what would later constitute Partha Chatterjee's, an internationally renowned subaltern and postcolonial scholar of the 20th century, critique of "the all-too-easy connection, claimed by every nationalist, of the state with the nation and the nation with the people."[151] Rizal's thoughts resonate in Chatterjee's own work in which Chatterjee argued that nationalism –

> launches its most powerful, creative and historically most significant project: to fashion a 'modern' national culture that is nevertheless not Western. If the nation is an imagined community, then this is where it is brought into being. In this, its true and essential domain, the nation is already sovereign, even when the state is in the hands of the colonial power. The dynamics of this historical project is completely missed in conventional histories in which the story of nationalism begins with the contest of political power.[152]

Rizal, Quibuyen notes, had "succeeded in putting his message across, at least to the *ilustrados*, for whom the two novels were originally meant – after all, the *ilustrados* were going to be the leaders in the task of social redemption." The message was uncompromising: "the masses did look up to the *ilustrados* as their leaders" and that if the *ilustrados* fail to embrace the real essence of their nationalist undertaking then "the evening twilight" rather than a "brilliant, clear … and beautiful day" was sure to come to the country. Such disasters are not uncommon today in post-colonial societies where what Frantz Fanon describes as the "useless native class" has just replaced the colonial masters as the new oppressors of their own people. This local élite which absorbs much of the value system of their colonizers renders nationalism not exactly the antidote of imperialism. Rizal's genius enabled him to see at that time the tragedy in the Philippines of today. After it was clear to Rizal that the Propaganda Movement in Spain was a useless exercise, he returned to the Philippines, thinking that the time had come to fight for the much-desired freedom of his homeland. Explaining to del Pilar in a letter of 12 August 1891 why he stopped writing for *La Solidaridad*, he wrote: "…frankly I do not want to waste time attacking and fighting private enterprises like that of Fr. Font, Quioquiap, and others. I fight for the nation, the Philippines." Upon coming home in June 1892, he toured Central Luzon to confer with fellow *ilustrados* and masons his idea of establishing the *La Liga Filipina*.[153] Many elements of society who were anxious for change were attracted to the league, among them Bonifacio, who became one of the founders of the *Liga* and had proven himself an astute organizer of the movement.

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[149] Quibuyen, 'Imagining the Nation', p. 475.
[150] Rizal quoted in Quibuyen, 'Imagining the Nation', p. 32.
[151] Partha Chatterjee, *The Nation and its Fragments: Colonial and Postcolonial Histories.* Princeton, NJ: Princeton University Press, 1993, p. 155.
[152] Ibid., p. 6.

It is important to examine what kind of a Filipino nation-state Rizal and the *Liga* imagined. Because people behind the *Liga* did not really have the chance to rule the country, the movement's Constitution, written by Rizal in Hong Kong while on his way home to the Philippines, would be a useful indicator. It was clear that the imagined nation by the nationalist *ilustrados* was inclusive, just, and developmental.[154] Rizal, having seen in his travels Japan, the US, Germany, and other modernizing countries of the 19th century, possessed a modernizing outlook. In the mind of the foremost Filipino intellectual of the time and other nationalist *ilustrados* was an image of a Philippine economy with a robust agriculture and industry. In the league's Constitution, the aims and strategies of the *Liga* were to encourage agriculture and the introduction of machines and industries.[155] Of course, as Chatterjee asserts, the development of the spiritual and material domains are two sides of the same coin, and are fundamental to build a just and progressive society. He writes:

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[153] The *Liga* was founded and inaugurated on July 3, 1892 with Ambrosio Salvador as the President, Agustin de la Rosa as Fiscal, Bonifacio Arevalo as Treasurer, and Deodato Arellano as Secretary.

> By my reading, anticolonial nationalism creates its own domain of sovereignty within colonial society well before it begins its political battle with the imperial power. It does this by dividing the world of social institutions and practices into two domains – the material and the spiritual. The material is the domain of the 'outside' of the economy and of statecraft, of science and technology, a domain where the West had proved its superiority and the East had succumbed. In this domain, then, Western superiority had to be acknowledged and its accomplishments carefully studied and replicated. The spiritual, on the other hand, is an 'inner' domain bearing the 'essential' marks of cultural identity.[156]

This wisdom reverberates as the perils of assimilating the outside aspects of nationalism without internalizing the inside, the more difficult reformation of men's spirit which Chatterjee calls "the essential marks of cultural identity". The Philippines, especially Manila in the 19th century, deceptively appeared to be a society undergoing modernization. However, it was a superficial modernity characterized by consumerism analogous to what Yukichi Fukuzawa called "the outward forms of material civilization" (Chapter 2). Wickberg describes the superficial cultural transformation:

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[154] The aims of the *Liga* were: (1) To unite the whole archipelago into one compact, vigorous and homogeneous body; (2) Mutual protection in every want and necessity; (3) Defense against all violence and injustice; (4) Encouragement of instruction, agriculture, and commerce; and (5) Study and application of reforms. http://www.jose-rizal.eu/ligafilipinae.html.

[155] "The aims of the *Liga* were to be carried out through the creation of a governing body composed of the Supreme Council, the Provincial Council, and the Popular Council. The members were each to pay ten centavos as monthly dues. Each of the members was free to choose a symbolic name for himself. The funds of the society were to be used in the following manner: (1) The member or his son, who while not having the means shall show application and great capacity, shall be sustained; (2) The poor shall be supported in his right against any powerful person' (3) The member who shall have suffered any loss shall be aided; (4) Capital shall be loaned to the member who shall need it for an industry or agriculture; (5) The introduction of machines and industries, new or necessary in the country, shall be favored; and (6) Shops, stores and establishment shall be opened where the members more economically than elsewhere. http://www.jose-rizal.eu/ligafilipinae.html.

[156] Chatterjee, *The Nation and its Fragments*, p. 6.

> The urbanization of Manila and the development of more cosmopolitan tastes and a more sophisticated brand of Spanish cultural influence found expression in a variety of ways. For one thing, there was a gradual, but impressive – for a colonial Asian country – development of newspapers and periodicals in Manila after 1850. [B]esides periodicals, there was some development of other forms of literature, particularly poetry and the novel in Spanish. [S]everal theatres were maintained, presenting dramas and comedies in Spanish and Tagalog. Western style dress became characteristics of men of the upper class in Manila during the last decades of the nineteenth century. In household effects, as in dress, the increase in Western influence was noticeable. Those who had become wealthy from the sale of export crops indulged themselves in a taste for European luxury goods, particularly items of furniture, as well as European carriages in which to parade about.[157]

The cosmopolitan development was, of course, enjoyed by the rich segment of the Spanish Philippine society – that segment of the *ilustrados* who had no connection with the poor and the dispossessed of the country. They worked for the assimilation of the Philippines into the colonial political structure. In the end, Rizal's execution by the Spanish authorities for treason, Bonifacio's assassination by and the subsequent triumph of the wealthy conservative *ilustrados* paved the way for the triumph of American imperialism.

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[157] Wickberg, *The Chinese in Philippine Life*, p. 131.

3.3 The English nationalist historic bloc and a culture of innovation

This section examines the broader social environment in 17th –century England to show that the absence of colonial structures and the development of solid nationalist political, economic, and cultural elites provided the leadership to establish a social environment that nurtured innovative activities. Practically all of today's developed countries, including Britain and the US, the supposed homes of the free market and free trade, have become rich on the basis of policy recipes that contradict today's orthodoxy.[158] Nationalism, that sense of collective destiny – the common weal- and pride in the nation which form the foundation and basis of social integration, was the motivation for developmental policies. However, the Renaissance period, Reinert notes, "rediscovered and flagged the importance and creativity of the individual" which promotes a culture of technology and innovation.[159] It is important to note here that nationalism and scientism fashioned common weal and individualism together as inseparable components of the social fabric of affluent societies.

A study by Cary Nederman shows that medieval England (second half of 15th-century) was already pregnant with nationalism. During this period 'collectivist' nationalism promoted those economic values, such as economic achievement, competitiveness and prosperity, which became the basis of the economic reform movement of the early Tudor period, hence providing evidence that (early) English nationalism may have impelled the capitalist transformation which was initially realized in 16th –century English agriculture. [160] It is possible to argue that, unlike the more conventional notion, political consciousness (nationalism) could precede economic change (capitalism).[161] It is not inconceivable that ideas for change could emanate from the politico-ethical structure, and not always from the economy. Nederman points out that Sir John Fortescue's (an English jurist, legal theorist, and considered a 'forerunner' of the economic reform movement) ideas influenced the English monarchy under King Edward on the form of government – *dominium regale et politicum* – based on consensual law and the sharing of power. He argued that the English government "organized politically and royally, generates a legal structure superior to those systems found in continental Europe." The rule of law prevented the monarchy from abusing its power and also allowed for the enactment of policies that "enhance the wealth of the entire nation."

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[158] Largely influenced by the thought of Friedrich List, *National System of Political Economy*. London: Longmans, Green and Co., 1885, Ha-Joon Chang's, *Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem Press, 2002 argues that an activist developmental state is necessary in economic development, and history tells us that. Taking similar cues from List, Reinert (2007) prescribes to developing countries a focus on building national productive power by establishing a critical mass of increasing return activities, outside the sector producing raw materials.

[159] Reinert, *How Countries*, p. 73.

Clearly, the embryonic modern idea of authoritative power separate from the personal authority of individuals developed in England much earlier than elsewhere in Europe, and it was a 'political innovation' to ensure economic development. In Fortescue's estimation, rulers who govern by the rule of law benefit because, as private persons, subjects are "encouraged (indeed, expected) to contribute to the public good by seeking their personal advantage in economic activity." If the people's ruler "adopts policies that impoverish them, they will express their displeasure directly and violently."

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[160] Cary Nederman, 'Economic nationalism and the 'spirit of capitalism': civic collectivism and national wealth in the thought of John Fortescue', *History of Political Thought* 26 (2), 2005, pp. 266-283.

[161] This is the theme of Dyer's critique on Greenfeld's idea of nationalism as the spirit of capitalism. He rejects Greenfeld's argument because he believes that economic change precedes political change, the more conventional notion. See Christopher Dyer, 'Review- Power and Profit/The Spirit of Capitalism', *History Today* 53 (6), June 2003, pp. 57-8.

Providing a political environment by which the private initiatives of the subjects in the economy are allowed to flourish was for the English the best policy to ensure political stability, security and prestige for the monarchy and wealth for the country: "The greatest safety, truly, and also the most honor that may come to the king is that his realm should be rich in every estate".[162]

Evidently, the English monarchy was very different from that of the 16th-century or the absolutist monarchies strongly entrenched on the Continent of Europe. The Glorious Revolution of 1688 placed England in its new constitutional path towards parliamentary sovereignty unconstrained by a fixed constitution or judicial review, centralization and the conflation of executive and legislative powers. This system offered more flexibility and freedom from hamstringing over-legalization that stifles political debate.[163] The political system engendered many other democratic institutions, such as trial by jury, the common law, the establishment of national news papers, the philosophic tradition of Bacon, Locke, and Hume, the 'Dissenting Academies', and the non-conforming sects, which "if not entirely unique to England, were in combination impressive evidence of a democratic culture providing a fertile soil for the flowering of local initiatives in all parts of the country." [164]

Nationalism manifested in Fortescue's 'political innovation' had to wait until it found expression in the 'knowledge innovation' (the so-called scientific revolution) that the first Industrial Revolution materialized in English society. Nationalism was key in the institutionalization of science in the English society (Chapter 1). The power of ideas as

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[162] Ibid., p.276.
[163] Michael Les Benedict, 'Review of Michael Foley, The Politics of the British Constitution," H-Law, H-Net Reviews, October, 2000. URL: http://www.h-net.org/reviews/showrev.cgi?path=13059971283349.
[164] Chris Freeman and Francisco Louca, *As Time Goes By: From the Industrial Revolutions to the Information Revolution*. Oxford: Oxford University Press, 2001, p. 179.

'a way of seeing things' influenced the English national development strategy to secure a dynamic economy. The belief in the possibility of achieving industrial progress by the method of observation and experiment came to the 18th century England largely through Francis Bacon's ideas, enlarged by the genius of Robert Boyle and Isaac Newton.[165] In mid-16th century, Francis Bacon, a lawyer, a statesman, intellectual reformer, philosopher and champion of science wrote the essay, *Of Innovations*. In his *The New Atlantis*, Bacon elevated the stature of science – a new system of learning based on empirical and inductive principles and the active development of new arts and inventions, a system whose ultimate goal would be the production of practical knowledge for "the use and benefit of men" and relief of the human condition. The genius about the Scientific Revolution was in finally throwing off the shackles of dogma that had impeded human progress. Although 18th-century science was, of course, very different from the 20th-century science, Chris Freeman and Francisco Louçã argue that "an experimental, enquiring, rational spirit and approach was necessary condition for the work of scientists and inventors alike." In fact, they point out that "the scientific revolution, dated either at the foundation of the Royal Society in 1660 or earlier in the century, *preceded* the financial revolution, the commercial revolution, the transport revolution and the Industrial Revolution, as these overlapping changes are conveniently dated." [166]

It was when these visions and ideas left the hands of these intellectuals and were translated into political visions of rulers and economic goals of businessmen and ordinary people that the power of ideas was unleashed to transform English society. English political leaders took to heart the ideals of rational governance and the role of technology in the economy. Many economic historians point out that the monarchs from Edward III (1327-77) to the Tudors, especially Henry VII (1485-1509) and Elizabeth I (1558-1603), used developmental policies that would today be described as "infant industry protection".[167] Protectionist policies were clearly practiced in England under Edward III (1312-77), but it was during Henry VII's rule (1485) when emulation became a strategic economic policy of England.[168] During his visits to Burgundy, Henry VII of England realized that the wealthy areas were those with a woollen textile industry. So convinced that England should change its development strategy, the king deployed a combination of trade and innovation policies to build the English wool industry and make England a producer and exporter of manufactured textiles rather than an exporter of raw material.

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[165] Thomas Ashton, *The Industrial Revolution, 1760-1830*. Oxford: Oxford University Press, 1948, p. 155.
[166] Freeman and Louca, *As Time Goes By*, p. 179.

These policies were continued by the English Parliament. For example, in 1721, Ha-Joon Chang notes, Robert Walpole, the first English prime minister, launched an industrial program "that protected and nurtured English manufacturers against superior competitors in the Low Countries, then the centre of European manufacturing." Walpole declared that "nothing so much contributes to promote the public wellbeing as the exportation of manufactured goods and the importation of foreign raw material."[169] Reinert (2007) points out that the economic policy toolbox included imposition of export duties to ensure that foreign textile producers importing raw material from England produced more expensive products than those of English producers. Wool manufacturers were also guaranteed tax exemptions for a certain period and granted monopolies in certain areas and for certain periods. The Tudor economic reform movement established a strong industrial sector, a raw material monopoly (wool), and overseas trade.[170] In fact, Chang notes, from Walpole's time when Britain began to reduce its tariffs, the average tariff rate was between 40-50 percent, still high compared to France's (20 percent) and Germany's (10 percent). The visions of a prosperous England were translated into economic activities of increasing returns as the ideas of reason and progress were embraced by English elites. These enlightenment ideals were promoted in English society with 'industriousness' closely associated with 'productivity and profit making' rather than holding public office. The English bourgeoisie, some of whom were also members of the Royal Society as scientists and politicians (e.g. Isaac Newton, Robert Boyle, and William Petty) came from the landed class, especially from the gentry – men who did not regard their intellectual pursuits as a kind of professional activity, let alone a type of office holding. Ellen Meiksins Wood maintains that a different capitalist system first emerged in Britain in the agrarian sector of 16th-century England (Chapter 1). The expansion of wool exports induced the government to implement the First Enclosure Movement in 15th - and 16th-century England, resulting in the conversion of open arable fields to private pastures in areas suitable for grazing. This created market-dependent wage workers from the small peasant cultivators, and manorial lords rented their lands to large farmers. The growing disequilibrium between the fixed rent that landlords received and the higher economic rents expected from the adoption of new technology led to the Second Enclosure Movement in the 18th century.[171] The English agrarian 'revolution', regarded by many economic historians as the critical component of the Industrial Revolution, was characterized by intensive, integrated, crop-livestock husbandry systems.

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[167] See List, *The National System of Political Economy*, pp 35-56; Chang, *Kicking Away the Ladder*, pp 19-20.
[168] Reinert, *How Rich Countries Got Rich*, p. 17, 77-81.
[169] Ha-Joon Chang, 'Protecting the global poor', *Prospect*, July 2007, http://www.prospect-magazine.co.uk/article_details.php?id=9653

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[170] Ibid., p. 79-80.

[171] Yujiro Hayami and Vernon Ruttan, *Agricultural Development: An International Perspective*, revised and expanded edition. Baltimore and London: Johns Hopkins University Press, 1985, pp. 73-98.

intensive rotation of arable land between food grains and feed crops and the use of green forage and fodder were key innovations. The primary impact of the English agricultural 'revolution' was to increase land, not labour, productivity. According to Peter Timmer "[t]he agrarian revolution apparently did not supply surplus labour for an industrial army of workers. It did provide food for the rapidly rising population from which both an increased agricultural and industrial labor force were recruited."[172] Agrarian capitalism had completely transformed the most basic human relations and practices, and had impacted a dynamic English economy in the 17th century and would eventually gave rise to its industrial form in late 18th century. It had to wait for the Scientific Revolution when the pursuit of mechanical knowledge was widely applied in industry. Margaret Jacob argues that varied ideas in regard to the utility of science generated different responses and consequences in the English and French societies.[173] Although it was from René Descartes[174], a French philosopher and mathematician, that a new order of gaining knowledge based on scientific method and rational thinking had originated, England was much more successful in exploiting science for industry than France. The ideological responses were conditioned by the "very real social, religious, and political differences" that separated the English from the French. Under a constitutional monarchy, the Protestant English society was presented with a science within an ideological framework that encouraged material prosperity through the practical industrial application of new mechanical philosophies — the so-called *Newtonian synthesis* of Cartesian science.[175] By contrast, in the Catholic French society, Cartesian science was "ideologically absolutist in politics", directing the scientific energy towards promoting order in the state rather than towards the utility of mechanical science in industrial devices. It presents a similarity to Spanish-Philippine society not only in terms of politics but also the influence of religion in the education system. Jacob points out that there was popular secularization of Newtonian science as it became an essential part not only of the world of inventors and entrepreneurs but also of English people from all walks of life. Scientific culture was not a mere adjunct to the merging mechanized industry, it was its essential source. The applications of technological knowledge in practical aspects of life were widely discussed across broad sectors of society, with the proliferation of local clubs, societies and associations, creating a huge and enthusiastic audience for scientific demonstrations by itinerant London lecturers. Moreover, Jacob argues that "British education in mathematics was superior ... must be seen as one part in the complex story why Britain industrialized first."[176] In England, the exclusion of the Dissenters from Grammar Schools and in Oxford and Cambridge led to the establishment of 'Dissenting Academies' where the Baconian-Puritan model of education was promoted. The schools emphasized empiricism and the natural sciences suitable for young men who were to go into business or profession in trades and engineering. There was little by way of separate education in science and engineering.[177] They desired education that was more relevant to daily life than classical curricula. Reformers called for replacing Scholastic studies with classes that taught a practical understanding of the world. As Dissenters were excluded from holding public office, able men were more likely to go into professions such as the Nonconformist ministry, a branch of medicine or into a family business so much so that industry first took root in Scotland and Glasgow. Charles Webster's book, *The Great Instauration: Science, Medicine and Reform, 1626-1660* (1975), put beyond reasonable doubt the link between Puritan ideals, the promotion of science. It was not so much "the origin of revolutionary ideas", as Peter Harrison argues, "but rather in the emergence of an ethos that would promote what we call a 'scientific culture', in which the values of utilitarianism, empiricism, and rationalism are given primary space."[178] Webster successfully established the "chronology and connexions of the movement, showing it to be more extensive, more deeply rooted, and more practically-oriented than generally imagined."[179] The Puritan intelligentsia battled for intellectual revolution and sought to promote rational reforms on many issues such as education, technological and agrarian improvement. But their reforming aims came to an end with the failure of the Revolution and the restoration of the monarchy in 1660. Consequently, Margaret Jacob argues that the reforms were taken up by one group led by Robert Boyle, John Wilkins, John Wallis, Walter Charleton, John Evelyn, Christopher Wren and others who

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[172] C. Peter Timmer, 'The turnip, the new husbandry, and the English agricultural revolution', *Quarterly Journal of Economics* 83, August 1969, p. 384.

[173] Margaret Jacob, *Scientific Culture and the Making of the Industrial West*, New York and Oxford: Oxford University Press, 1997, p. 52.

[174] Margaret Jacob, *The Cultural Meaning of the Scientific Revolution*. Philadelphia: Temple University Press, 1988, p.59.

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[175] The Newtonian synthesis of Descartes science in England was a result of the interplay of Protestant beliefs and the new science's mechanical philosophies. As an Anglican himself, Sir Isaac Newton rejected the Cartesian philosophy which was "based on the cultivation of the individual's passion and interests"... "a life spent in the pursuit of pleasure and the avoidance of pain, a life more secular than it was otherworldly". For Newton this opens the door to nothing less than a scientifically justified atheism. Nevertheless, Newton retained that aspect of the Cartesianism on mechanical tradition to fight against "the ever present possibility of an Aristotelian revival". He combines this with his Anglican theology emphasizing order and harmony as the primary manifestation of God's role in the universe. The basic premise is that the universe is made up of lifeless atoms colliding in the vacuum space. But since it is only the providential God, not random chance, which is responsible for all the motion in the universe, there is role for Spirit in the material world (Ibid., p. 50 and 61).

[176] Jacob, *Scientific Culture*, p.58.

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[177] David H. Pratt, *English Quakers and the First industrial Revolution: A Study of the Quaker Community in Four Industrial Counties - Lancashire, York Warwick, and Gloucester, 1750 – 1830*. London: Garland Publishing, Inc., 1985.

[178] Peter Harrison, 'Science and Dissent', *Minerva: A Review of Science, Learning and Policy* 44 (2), April 2006, pp. 223-224.

[179] See Roy Porter, 'Review- The Great Instauration: Science, Medicine and Reform, 1626-1660', by Charles Webster', *The Historical Journal* 19 (4), December 1976, pp. 1026-1030.

"continued to advocate and engage in the organized pursuit of experimental science ... but they dissociated this project from any radical reform of church, state, the economy or society." Jacob further argues that "they did not cease entirely to be reformers, but couched their reforming sentiments in vague terms of improving man's health and estate through science." In fact, these reforms would progress without necessarily changing the prevailing social structure in the direction of greater social equity.[180] Moreover, English scientists, inventors and entrepreneurs founded the Derby Philosophical Society and their ideas as to the ideal factory organization and division of labour led to the emergence of factory-based production, which defined the future paths to cost-reducing mechanization of the cotton textile, iron, and water power, railways and steam power industries.[181] This replaced the pre-industrial small workshops of individual inventor-entrepreneurs and cottages of putting-out rural industries. The superimposition of new technologies, new procedures and new best practices supported a rapid increase in productivity and led to radical advances in the relative position of English industries and firms in the world economy. Considering the sorry state of science education in the Spanish Philippines it is understandable that the scientific and technological activities of the Economic Society of Friends of Manila during the Spanish time were unlikely to have any significant result.

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[180] James Jacob and Margaret Jacob, 'The Anglican origins of modern science: the metaphysical foundations of the Whig Constitution', *Isis* 71 (2), June 1980, pp. 251-267. http://www.compilerpress.atfreeweb.com/Anno%20Jacob%20&%20Jacob%20Anglican%20Fdn%20of%20Modern%20Science.htm
[181] Freeman and Louçã, *As Time Goes By*, pp. 169-70.

3.4 Summary

This chapter traces the roots of the development challenge in the Philippines to develop its technological capability. The historical analysis was undertaken to locate the beginnings of the formation and the subsequent entrenchment of the dominant transnational historic bloc(s) in Spanish Philippines (1565-1898). My thesis is that the foundations of the enduring social structures which, until today, continue to impede the modern transformation of the country were laid during the Spanish colonial period. What troubles the Philippines of today are an economy dominated by global trade and financial interests and a government controlled by cosmopolitan political leaders and bureaucrats which, time and again, have privileged economic liberalism.

In Chapter 1 I posited that a broader social environment created by an interacting nationalist historic bloc that nurtures innovation is crucial in technological innovation and industry growth. This chapter's analysis shows Spanish colonialism to have established and entrenched a global trade- and financial-based economic interest in the Philippines comprising foreign merchants (Spanish, Chinese, English, and Americans) and their local counterpart, the landed, wealthy Filipino *ilustrados* who emerged from the political structure and the liberal economic reforms instituted by Spain. It was the colonial government's economic policy of free trade and economic openness as a means of wealth creation, which facilitated the entrenchment of trade interests. While global trade with more advanced nations, initiated by the Spanish and Chinese merchants, gave the Philippine economy the impetus to move from a condition of backwardness into making advances in agriculture, the colonial free trade regime from the mid-18th century was a wrong path as far as development of the productive powers of the local economy was concerned. If List had been heard, restrictions on commercial activity would have been imposed to promote the growth of production and service industries.

The interaction between an existing Chinese world system and an expanding European system provided the milieu in which foreign trade activities by the Chinese during the pre-Spanish period and the subsequent strengthening of this trading activity in alliance with the Spaniards and then later the English and Americans, created an institutional constraint which channelled the economic activities of the local élites towards wealth-creation based on land and crop exportation. It did not provide the venue for an industrial transformation; instead a rural proto-industry, a precursor for mechanized manufacturing industry, was ruined.

Spanish colonialism engendered a fragmented local élite and nationalism. The cosmopolitan *ilustrados* which had a hispanized national identity, cultural and economic affinity with the colonizers did not have nationalist sentiment. Hence their agenda was for assimilation. However, the nationalist segment of the *ilustrados* provided moral and intellectual leadership to the masses as well as combat help during the 1896 revolution. Through a robust alliance of the middle class and the masses, the historic bloc established what Quibuyen calls a "hegemonic nationalist-popular will" which toppled the three-and-a-half century Spanish rule over the Philippines. The valuable lesson learned was that nationalist sentiment borne by educated nationalist middle class and the poor farmers was a potent force for 'change' in Spanish Philippines.

The formation of a global historic bloc committed to free market democracy has been presented by some scholars as a quintessential phenomenon in the era of globalization. But countries which have colonial experiences, such as the Philippines, have been confronted with such a constraining structure a long time ago, and the formidable challenge faced by these countries is how to create a counter-hegemonic nationalist developmental bloc. The experience of England illuminates the point made. Nationalist political and intellectual elites promoted an environment that nurtured innovation and economic activities of increasing returns. Moreover, the analysis shows that among the major institutional bottlenecks which hindered the development of industry in Spanish-Philippines besides free trade are lack of financial capital, technology, and a conservative educational system that did not promote an ethos of scientific culture.

Chapter 4 Continuity and changes, 1898-1946

> It was in consequence of Rizal's revolt that Aguinaldo and the Katipunan arose, who lived to revenge their hero's memory, completing his work by turning the Spaniards and their dreadful priests out of the Islands. To do this, as you know, they had to get America to help them; which the Americans did, and stayed on. The idea is that they are going to teach the Filipinos how to govern themselves, which, it appears, ought only to be done by all peoples and races after the American method. The Filipinos are said to be delighted about this, but the puzzling anomaly is that they fought, and are still fighting the Americans tooth and nail to get their own liberty, their own way, but they are not asked what they think at all, and if they show any signs of wanting to get rid of this America burden and govern themselves in their own fashion, they are called Insurgents and knocked on the head, or dubbed common robbers and strung up to a tree.
>
> ***Mrs. Dauncey (1904)***

> That all Negroes shall be prohibited from weaving either Linnen or Woollen, or spinning or combing of Wooll, or working at any Manufacture of Iron, further than making it into Pig or Bar iron: That they be also prohibited from manufacturing of Hats, Stockings, or Leather of any Kind...Indeed, if they set Manufactures, and the Government afterwards shall be under a Necessity of stopping their Progress, we must not expect that it will be done with the same Ease that now it may.
>
> ***Joshua Gee, Trade and Navigation of Great Britain Considered (1729)***

In Chapter 3, I discussed the origins of the dominance of global traders and financiers and economic liberalism in Spanish Philippines. In this chapter, I discuss the continuity and changes of these structures as a result of the interaction between the cosmopolitan segment of the Filipino *ilustrados* and an industrial colonial power – the US and then Japan. I argue that American 'benevolent assimilation'[1] inserted cosmopolitan Filipino politicians, intellectuals and technocrats in the colonial structure even as their economic counterpart was already incorporated earlier, during the Spanish colonial period. This completed the entirety of co-optation and the formation of the global-local historical alliance. The three-year Japanese 'intervention' was too late, and constrained by total American co-optation, the Japanese occupation failed to do what it did for Malaysia and Indonesia against the British and Dutch colonial forces, respectively.

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[1] 'Benevolent assimilation' was an idea promoted by American imperialists, arguing that the annexation of the Philippines was not "territorial expansion", but rather the "expansion of civilization". It was the belief that the US, unlike European imperial powers, is an enlightened imperial nation because its rule, as

Sub-section 4.1 examines the 'benevolent assimilation' and 'democratic tutelage' colonial policies of the US and their role in securing the establishment of the global historic bloc that rivalled a weakened, if not disappearing, nationalist bloc in the Philippines. It also examines the Japanese colonial legacy in post-Spanish Philippines even as Japan was a contending power facing the US in the Asia-Pacific region from late 19th century to mid 20th century.

Sub-section 4.2 discusses the role of the American nationalist historic bloc in creating a hospitable social environment in which political and cultural influences helped to nurture the innovative and productive powers of the US early in its developmental path. The Americans emulated England, and their maxim in the 1820s was "Don't do as the English tell you to do, do as the English did."[2] Sub-section 4.3 discusses the Japanese nationalist historic bloc to illustrate industrial development of an Asian economy with no

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McKinley declared, was not to "exploit but to civilize, to develop, to educate, to train in the science of self-government."(Stuart Creighton Miller, *Benevolent Assimilation: The American Conquest of the Philippines, 1899-1903.* New Haven: Yale University Press, 1982, pp. 18, 21, 25); McKinley quoted in J.W. Wheeler-Bennett, 'Thirty years of American-Filipino Relations, 1899-1929', *Journal of the Royal Institute of International Affairs* 8, 1929, pp. 503-21).

[2] Erik Reinert, *How Rich Countries Got Rich...and Why Poor Countries Stay Poor*. New York: Carroll and Graf Publishers, 2007, p.23.

colonial experience. This is the third case to illustrate NSI as an historical structure. Sub-section 4.4 provides a summary.

4.1 Benevolent assimilation and the global historic bloc

This sub-section discusses the fragmentation of the local élite and the dominance of the conservative and wealthy faction over the nationalists. The 'democratic tutelage' policy which Ruby Paredes asserts was "flawed by an organic contradiction"[3] continued (or even strengthened) a patrimonial political structure; the only difference was that election of the local executives decentralized power to the local bosses.[4] The 'pro-imperial-cum-anticolonial' politics of the *ilustrados* resulted in the creation of a 'strong state' and embedded 'nationalist' economic principles in the Philippine Constitution of 1935[5]. Nonetheless, this strong power was never used to modernize the economy. With merchants and financiers' continued control of the economy, the establishment of manufacturing was effectively prevented. The Philippine economy displayed more fundamental continuity rather than rupture: "the more things change, the more they stay the same", as Paul Hutchcroft puts it.[6]

Late 19th-century Filipino nationalism ended in tragedy with both Rizal and Bonifacio executed – Rizal by the Spaniards and Bonifacio, ironically, by the "men who he had earlier initiated into the *Katipunan* brotherhood."[7] Floro Quibuyen argues that the fault line lay in "the internal struggle" – political and ideological – since the Propaganda Days between the nationalist and cosmopolitan *ilustrados*. The execution of Rizal and Bonifacio was the "triumph of the wealthy conservatives in Aguinaldo's government" and, in turn, "paved the way for the triumph of American imperialism in the Philippines."

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[3] Ruby Paredes, 'The origins of national politics: Taft and the Partido Federal', in Ruby Paredes (ed.) *Philippine Colonial Democracy*, Monograph Series 32. New Haven, CT: Yale University Southeast Asian Studies, 1988, p. 65.

[4] John Sidel, *Capital, Coercion, & Crime: Bossism in the Philippines*. Stanford, CA: Stanford University Press, 1999.

[5] Emmanuel S. de Dios, 'Nationalism and the strong state in the 1935 Philippine constitution', *Philippine Review of Economics*, XXXIX (1), June 2002, p. 1.

[6] Paul Hutchcroft, 'Oligarchs and cronies in the Philippine state: the politics of patrimonial plunder', *World Politics*, 43, 1991, p. 414.

Paul McCartney argues that the US government's colonial policy choices in the Philippines were rooted in the transformation of American national identity and values that took place in the Spanish-American War in 1898.[8] Two features of America's nationalist tradition bear a special relationship to the idea of American mission: American civil religion (Manifest Destiny) and Enlightenment liberalism. These ideological foundations guided the American policy makers' decisions in the colony. [9] 'Manifest destiny' and the superior beneficence of American political institutions was "a philosophical conviction held by American reformers to support expansionism". Thus, for Beveridge America's historic mission was racial, imperial, and divine.[10]

America's victory in the Spanish-American war firmed up its expansionist agenda in the Asia Pacific, and the Philippines proved strategic for security and economic reasons.[11] As the vice-governor and later advisor on Philippine Affairs during World War

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[7] Floro Quibuyen, *Aborted Nation: Rizal, American Hegemony and Philippine Nationalism.* Quezon City: Ateneo de Manila University, 1999, p. 252.
[8] Paul McCartney, *Power and Progress: American National Identity, the War of 1898, and the Rise of American Imperialism.* Baton Rouge: Louisiana State University, 2006.
[9] Craig Murphy argues that liberalism and social Darwinism also guided the 19th-century inter-imperial world order and the subsequent colonial expansion of European powers, and the same was adopted by the US at the turn of the century. See Craig Murphy, *International Organization and Industrial Change.* Oxford, UK: Oxford University Press, 1994, p. 53.
[10] Alfred J. Beveridge, Congressional Record, quoted in H. W. Brands, *Bound to Empire: The United States and the Philippines.* New York: Oxford University Press, 1992, p. 33.
[11] See Paul Kramer, *The Blood of Government: Race, Empire, the US and the Philippines.* Chapel Hill: University of North Carolina Press, 2006, pp. 94-95; Alfred McCoy, 'The Philippines: independence without decolonization', in Robin Jeffrey (ed.) *Asia – The Winning of Independence.* London: Macmillan Press Ltd., 1981, p. 43. "A tenacious myth, created and nurtured by two generations of historians, is that

II, Joseph R. Hayden, declared "it was not the desire to acquire territorial possessions as such which brought the United States to the Philippines; rather it was the ambition of America to have a share in the commerce of Asia, particularly China."[12] The Philippines was to be a staging area for American capitalists to access the China coast. Nothing was new.

Although American colonial policy was a contradiction to America's Declaration of Independence, officials argued that their occupation of the Philippines was warranted because the Filipinos, belonging to the lesser race, were incapable of self-governance. Political equality and self-government as ideals can only be granted when nations are capable of living up to these ideals.[13] Quibuyen argues that if the intention was to prepare the Filipinos for independence and self-rule, then the Americans had no reason at all "to wage a costly and genocidal war (1899-1902) and pacification campaign (1902-1912) against the Filipinos." The US had no reason to rule the Philippines. "A US intelligence report indicated that as of late August 1898, the Filipino nationalist forces were able not only to win decisive victories against Spanish forces and control the provinces of most of Luzon, but also set up local governments in some liberated towns."[14] The Philippines declared independence from Spain as early as 12 June 1898, and, as Quibuyen points out, by 23 January of 1899 the Philippine Republic "founded on the bedrock of a duly ratified

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Admiral Dewey's victory at Manila Bay in 1898 came as a stunning surprise to American political leaders and average citizens alike, none of whom had ever heard of the Philippines…Yet American firms had been engaged in the Philippine abaca trade long before Dewey arrived there. Economic intelligence pertaining to the archipelago appeared sporadically in the commercial press, and the most valued fiber for cordage was Manila hemp" (Miller, *Benevolent Assimilation*, p. 13).

[12] Joseph R. Hayden, *The Philippines: A Study in National Development*. New York: Macmillan and Company, 1942.

[13] Alfred J. Beveridge, 'Our Philippine Policy', Congressional Record, Senate, January 9, 1900, pp. 704-711, in Daniel B. Schirmer and Stephen Rosskamm Shalom (eds.), *The Philippines Reader: A History of Colonialism, Neocolonialism, Dictatorship, and Resistance*. Boston, MA: South End Press, 1987, pp. 23-26.

[14] Ibid., p. 496.

Constitution…was set on running its course and pursuing its destiny as an independent nation."[15] It was obvious America's mission of democratic tutelage was no longer needed.

While the Philippines was ideally placed for commercial and naval access to the China coast, its 6 million brown inhabitants "made them unacceptable to white Americans as subjects for assimilation".[16] To solve this dilemma, the American colonial government came up with a bright idea of 'democratic tutelage' with the ultimate goal of creating an independent nation-state, but only after the ties that will bind the Philippines politically, economically, and culturally to America have been secured. America must win the hearts and minds of Filipinos, not only to quell resistance but to *establish* and *sustain* American rule. Resistance to American rule from Filipino armed revolutionaries had been very strong so that Jacob Schurman, head of the first Philippine Commission, had this piece of advice in his cable to John Hay, the US Secretary of State:

> …while the Filipino stops at nothing nor thinks of death when influenced by hatred resentment or revenge, he is much moved by sympathy and generosity of powerful superior, whose power he has felt. Believe magnanimity our safest, cheapest, and best policy with Filipinos.[17]

The first step was consensual acquiescence to the cosmopolitan local élite by accommodating their wishes and ideals: "To secure the confidence and affection of the

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[15] Mabini thought that the war needed a powerful president, but the conservative *ilustrados* wanted to create a legislature that is more powerful than the executive. Gen. Antonio Luna was also hated and feared by the conservatives because he threatened to punish severely anyone who would negotiate with the Americans. Aguinaldo had Luna assassinated and Mabini resigned. Aguinaldo's new Republic was now dominated by the wealthy *ilustrados*. The American military command knew that Mabini and Luna were the brains behind the revolutionary government. Gen. Otis' stated that Luna, not Aguinaldo, had been the real "evil influence" behind the "insurrection", and the one who had not allowed Aguinaldo and his "pseudo rebels" to surrender. With Luna out of the way Otis thought the war was as good as over (quoted in Miller, *Benevolent Assimilation*, p. 75).

[16] McCoy, *The Philippines*, p. 43. Congressional Record, 55th Congress, 3rd Session, pp. 20, 432-503, 561-62, 1342, 1348, 1445, 1479, 1830, 1845-47, quoted in Miller, *Benevolent Assimilation*, pp. 15, 26).

[17] United States Philippine Commission, *Report of the Philippine Commission to the President, January 31, 1900*. Washington, DC: US Government Printing Office, 1900, p. 90.

Filipinos", the Commission asserts, "it is necessary not only to study their interests, but to consult their wishes, to sympathize with their ideals and prejudices."[18] Fully aware that the cosmopolitan *ilustrados* wanted "annexation to the United States first, and for independence secondly", the American leaders deployed rhetorical strategy that would appeal to the local élite. Julian Go argues that President McKinley's proclamation of 'benevolent assimilation' in December 1898 used such words as 'freedom' and 'justice' which portrayed Spanish rule as tyrannical while the US rule would be benign.

In accordance with the first Commission's recommendation, a second Philippine Commission took over the government from the military authorities on 4 July 1901 with Governor William H. Taft as the chief executive. The Commission, which dispensed legislative power, incorporated three representatives from the wealthy and conservative *ilustrados* – Trinidad H. Pardo de Tavera, Benito Legarda and Jose Luzuriaga.[19] The American colonial rule from 1901 until the outbreak of WW II established a representative system preparing the Filipinos for the governance of an independent nation:

> There was then, a progressive extension of political power to Filipinos during the four decades of American colonial rule – municipal elections in 1901, provincial government elections in 1902, lower house legislative elections in 1907, upper house elections in 1916 and election of a Commonwealth president in 1935. Paralleling the growth of elective

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[18] The US Consulate General in Hong Kong, R. Wildman, met with exiled *ilustrado* leaders in Hong Kong, such as General Emilio Aguinaldo and the result of such meeting was contained in Wildman's report 'The Policy and Hopes of the Insurgent Government of the Philippine Islands'. In his memo, Wildman pointed out that the Filipinos "cannot be dealt with as though they were North American Indians willing to be removed from one reservation to another at the whim of their masters." The Filipino élite were far too westernized and they were not driven by primitive instincts but "are fighting for freedom from the Spanish rule and rely upon the well known sense of justice that controls all the actions of our Government as to their future." R. Wildman to US State Department, 18 July 1898, quoted in Julian Go, 'The provinciality of American empire: 'liberal exceptionalism' and US colonial rule, 1898-1912', *Comparative Studies in Society and History* 49 (1), 2007, p. 94.

[19] Horacio de la Costa, S.J., *Readings in Philippine History: Selected Historical Texts Presented with a Commentary*, transl. H. de la Costa, Makati, Philippines: MDB Printing, 1965, p. 251-252.

> offices was a gradual transfer of bureaucratic positions from Americans to Filipinos. In 1903 Filipinos held 49 percent of US colonial appointments, mainly at the bottom of the bureaucracy; by 1913 they held 71 percent; by 1920 there were 12,561 Filipinos employed against 582 Americans; and by 1928 virtually the entire colonial government, from cabinet ministers down to postal clerks, was manned by Filipinos. Although more racist in their personal dealings with Filipinos than the Spanish, American colonials still achieved a fair success in preparing the archipelago for independence.[20]

Institutionalizing an electoral system at all levels of government – municipal, provincial, and national, Quibuyen asserts, was an effective way of "co-opting the local élite into effective partners in the colonial enterprise, through the creation of a civil government".[21] The result of this co-optation process was the entrenchment of "the so-called nationalist leaders and stalwarts of the alleged 'pro-independence' Nacionalista Party, Quezon, Osmeña and Roxas", but was clearly hypocritical.[22] In some ways, the election system suggested that political modernization had moved ahead. But what had happened was merely the transformation of cosmopolitan *ilustrados* into 'local' or 'national' despots or 'bosses' by the 'colonial state' and these 'bosses', mostly landlords, had now become small-town mayors, provincial governors, congressmen, and even presidents.[23]

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[20] McCoy, *The Philippines*, p 43.

[21] Floro C. Quibuyen, 'Imagining the Nation: Rizal, American Hegemony and Philippine Nationalism', PhD Dissertation. University of Hawai'i, 1996, p. 569.

[22] The shifting 'nationalist' politics in the Philippines came to a peak in the 1907 Philippine Assembly elections pitting the Partido Federal (dominated by Manila *ilustrados*) against the Nacionalistas (dominated by provincial *ilustrados*). Ruby Paredes strongly argues that it was misleading to consider the electoral victory of the Nacionalistas in 1907 as a victory of 'Filipino nationalism': "Having campaigned vigorously on a platform of immediate independence, Osmeña subsequently played an active role in subverting the people's will, including, in the words of Governor General James Smith, 'kill[ing] three attempts to introduce an immediate Independence resolution'." Enjoying the support of the Federalistas and the Nacionalistas, Taft did not have difficulty pushing forward his political and economic agenda because he assured his clients of their full participation in the process (Paredes, 'The origins of national politics', p. 42, 49.

[23] Élite domination in politics and governance was facilitated by an election system which was limited to literate and propertied classes, representing only 1.4 percent of the country's 7.6 million people registered to vote at that time (Paredes, 'The origins of national politics', p. 42).

The bureaucracy merely 'formalized' an 'old way' of surplus extraction by the élite – the use of state apparatus and coercive power. Being still under the 'tutelage' of the Americans (which had no intention to create a developmental bureaucracy) and having no affinity with the poor masses, the cosmopolitan *ilustrados* were incapable of carrying a modernizing project. Instead, the newly created state class of *empleados* used their offices to wield power for surplus extraction. Basically, it was the same dog with a different collar. Spain could not be expected to do that because it was not modern itself, but America was modern. The burden then to modernize the Philippines was on a modern America. But the same patrimonial colonial state produced American-trained Filipino bureaucrats which did not have a developmental mindset, thus their material interests were bound up with the state. The government became the biggest employer which, more often than not, jeopardized meritocracy.[24]The *ilustrado* nationalism devoid of nationalist sentiment and which made the *ilustrados* part of the colonial political structure was a disincentive to creating an impersonal bureaucracy because they benefited from the status quo. This was reinforced by the colonial government's project to subjugate Filipino nationalism to quell resistance. In essence, the Philippine state during American rule remained the same as it was in Spanish Philippines – patrimonial. Public office was treated as a personal property.

War damage and the enormous problem of reconstruction and rehabilitation limited the bargaining leverage of the Filipino leaders for independence. Export crop production was seriously damaged by the Japanese attacks, and 60 percent of the sugar mills were destroyed. The Philippine Rehabilitation Act provided for the payment of

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[24] Renato Constantino, *Neocolonial Identity and Counter-Consciousness: Essays on Cultural Decolonization*, edited and with introduction by István Mészáros. London: Merlin Press, 1978, pp.139-140.

$400 million in war damages, the transfer of $100 million of surplus military property to the Philippine government, and a grant of $150 million for the repair and construction of public facilities; however, this was tied to the acceptance by the Philippines of the Philippine Trade Act of 1946 (known as the Bell Trade Agreement).[25] The Trade Act ensured that free trade between the US and the Philippines would continue. P.W. Preston neatly captures the irony of America's benevolent assimilation which in actuality meant making the Philippines economically dependent to America forever:

> The American colonial regime had its own very distinct style. Having acquired this territory in pursuit of the status of "great nationhood", the US promptly determined to adhere to its espoused democratic ideals and to prepare the territory for independence. This they did – again in their own fashion; this included the tying of the Philippines' economy tightly to that of the US. In time the USA became a popular master, and the local elite had no great wish for independence.[26]

The collaboration between the cosmopolitan Filipino political elite was not without conflict, but the "tangled relationship", as Brands puts it, made the Filipino élites masters of the imperial game, speaking "the language of Filipino nationalism while relying on the US, and American leaders espoused democracy for Filipinos even as Washington reinforced rule by the élites".[27] The local élites knew very well how to maintain their hold on the island economy and society. Actors continuously shifted from allies to rivals for political control. What I have just described is a clear picture of a Filipino leadership that Rizal feared would emerge when nationalism was not embraced at the spiritual and moral level by those who were to lead. Franz Fanon's "useless native class" as oppressors of their own people, replacing the colonial masters, was clearly in the making.[28] The irony of it all was that the US used Rizal – the embodiment of the ideals of the 1896 popular nationalist Revolution – as an 'official' symbol to continually erode the ideals of that same revolution. At the end of American occupation, Quibuyen points out, the Americans could congratulate themselves for they had achieved what they set out to do to establish and sustain their rule in the Philippines:

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[25] Manuel Roxas, 'Message on the State of the Nation to the Second Congress', in *Important Speeches, Messages and Other Pronouncements of President Manuel Roxas*. Manila: Bureau of Printing, 1947, pp. 48-50.
[26] Peter W. Preston, *Rethinking Development: Essays on Development and Southeast Asia.* London and New York: Routledge and Kegan Paul, 1987, p. 200.
[27] Brands, *Bound to Empire*, p. vii.

> …firstly, the destruction of the nationalism, i.e., the consciousness forged in the late 19th century struggle, that motivated the resistance to American imperialism; and secondly, the creation of a new *homo nationalis* – who would be attached to so-called "America-style values" (McCoy's words) while remaining "Filipino".[29]

With a gasping Filipino nationalism and the deepening Americanization of the cosmopolitan local élite, economic liberalism – an American imperialistic value – strengthened its hold in the colony. The US government did little to change the economic structure inherited from Spain; rather, it strengthened the hold of local and foreign traders and financiers. The import-export and financial business continued to be the foundation of Philippine economy.[30] In 1909, the Payne Aldrich Act under the behest of American expansionist commercial and financial interests was instituted to pave the way for Philippine-US Free Tree Agreement.[31] The law provided that all articles grown, produced, and manufactured in the US were to be admitted free of duty into the Philippine Islands without any restrictions. In return, entry was to be granted to Philippine agricultural products to the US market with certain restrictions, most of which were removed later by the Underwood Tariff Act of 1913.

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[28] Frantz Fanon, *The Wretched of the Earth*, Preface by Jean Paul Sartre, Translated by Constance Farrington. New York: Grove Press, 1968 c. 1963.

[29] Quibuyen, 'Imagining the Nation', p. 540.

[30] Philippine Economic Association, *The Economics of the Hare-Hawes-Cutting Act: An Analysis*, Manila: The People's Press, 1933, p. 186.

[31] Power and Sicat note: "What seems to have been the most important influence during this period was not the war but the opening of American market on a preferential basis to Philippine exports, mainly agricultural and agriculture-based products. This proceeded gradually with a 25 percent preference until 1909, free trade with quotas until 1913, and fully free trade thereafter until the 1930s…Manufacturing growth was at a more modest pace of slightly over 4 percent, but while manufacturing doubled over the period, two manufacturing sectors – food manufacturing and chemical products – increased, respectively, to four time and eleven times their 1902 levels. These sectors were dominated by sugar and coconut oil both of which were exported to the American market in rapidly increasing volume." (See, John Power and Gerardo Sicat, *The Philippines: Industrialization and Trade Policies*. London: Oxford University Press, 1971, p. 14).

Commercial and financial interest continued to exert power. Owen points out:

> From the beginning most Filipinos who spoke for the country encouraged, if indeed they did not create, the definition of Philippine interests as perpetually agrarian; in the absence of a significant Filipino industrial sector there was no political faction to represent and fight for such a sector. The tariff policy was predicated not just on American capitalism, but on a joint Filipino-American assumption that the exchange of American manufactures for Philippine raw materials was an equitable quasi-permanent relationship.[32]

What the Payne-Aldrich Tariff Act had accomplished was to concentrate further the national wealth. A significant expansion occurred in the landholdings of the landed oligarchs which later prevented an effective land reform program in the country. Wealthy landed families in the sugar-growing provinces of Negros Occidental in the Visayas region, Batangas and Tarlac in Luzon, and Bukidnon in the southern islands of Mindanao engaged in significant expansions of their *haciendas*. Land under export crop production grew from 466,000 hectares in 1902-1903 to about 1,454,000 hectares in 1938, a growth rate of 3.2 percent per year.[33] American exports into the colony continued to be duty-free for the duration of the commonwealth. Philippine exports to the US, on the other hand, were only allowed duty-free entry for the first five years of the commonwealth, and were subject to graduated export taxes from 5-25 percent of the American duty until the time of independence when full duties were applied.[34] Moreover, quotas were applied to major

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[32] Ibid.

[33] Stephen A. Resnick, 'The decline of rural industry under export expansion: A comparison among Burma, Philippines, and Thailand, 1870-1938', *The Journal of Economic History*, 30 (1), 1970, p. 63.

[34] Ibid., p. 55-56.

Philippine exports, such as sugar, coconut oil, and cordage, and these quotas were set much lower than actual exports in the years preceding the legislation, indicating that the intention was to help the struggling American farmers.[35]

Even worse than the Payne-Aldrich Act, the Bell Trade Agreement surrendered to the President of the US the Philippines' power of legislation affecting tariffs, currency, and credit. It also granted the Americans "parity rights", which meant that they had the same rights as the Filipinos to exploit the country's natural resources and operate the public utilities. The foreign exchange policy was under the control of the US President, until the Bell Trade Act was amended in 1954 by the Laurel-Langley Agreement, which abolished US authority to control exchange rate of the local currency. The parity rights lasted a further 28 years until they expired in 1974.[36]

In the extremely bitter debate over the issue, Salvador Araneta, "the foremost political economist of his time", as Alejandro Lichauco puts it, "towered above all others" in warning the Filipino society of the consequence of accepting the Bell Trade Act. Araneta told the Filipinos that "free trade and parity" in the entirety of American occupation in the Philippines prevented "progress in the industrialization of our country". He added: "We had free trade since 1909. And yet, we had no industries", and he argues the cause to be that "as long as free trade exists, the US will send to the Philippines consumer goods…duty free and without limitation." Araneta's idea of IS strategy as an alternative had been already taking shape: "New Philippine industries need protection as any child does. To expect them to stand up against great American industries is the height of unrealism."[37] Despite Filipino opposition, the law was passed and free trade was implemented.

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[35] Ibid.

[36] Salvador Araneta, *America's Double-Cross of the Philippines: A Democratic Ally in 1899 and 1946*, Philippines: Sahara Heritage Foundation, 1999, p. 59. The Filipinos across broad sectors of the society were opposed to the proposed free trade law from the very beginning. Among the organizations that opposed the Bell Act were the Democratic Alliance, the Civil Liberties Union, the Philippine Layers league, the Commission of Labour Organizations, the Philippine Veterans Association, the Society of Economists, Statisticians and Accountants, the Philippine Writers' Association, the Congress of Youth Organizations, the Philippine Student Union, the National Peasant Unions and the Philippine Newspaper Guild. Alejandro Lichauco, *The Philippine Crisis: A Study of the Processes, Techniques and Policies that Have Kept Filipinos Poor, and What Should Be Done*. Makati, Philippines: St. Pauls-Press, 1993, p. 23.

Chinese merchant enterprises prospered during the American period because of the favourable environment accorded them, such as the granting of political representation by the Consulate and the Chinese Chamber of Commerce, the protection assured against violence from local people, and the removal of many of the legal restrictions imposed by the previous Spanish government. Similar to the Spanish, the American colonial administration was more interested in using the Chinese trading network for the marketing and distribution of American products in the Philippines and the export of raw materials.[38] The import business was handled mainly by a relatively small number of large American commercial houses in Manila, although the Chinese were also well-established in this area. Thus, prior to the outbreak of World War II the Chinese came a close second to the Americans in controlling foreign trade, and held a dominant position in the domestic trade.[39] Theresa Chong Cariño points out that "in 1930, although Chinese share of trade was only 13 percent of total Philippine trade, their position in retail trade was regarded as 'truly impressive', as they controlled 90 percent of domestic retail trade." In the financial sector their hold was also strong. The Chinese were also involved in primary processing of agricultural crops such as coconut oil, Manila hemp, sugar and tobacco.

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[37] Salvador Araneta, 'Precepts we cannot surrender: a reply to a speech of Pres. Roxas advocating acceptance of the Bell Act', *Economic Re-examination of the Philippines: A Review of Economic Policies Dictated by Washington.* Philippines: Sahara Heritage Foundation, 2000, p. 93.

[38] Theresa Chong Cariño, 'The Philippines', in Edmund Terence Gomez and Hsin-Huang Michael Hsiao (eds) *Chinese Business in Southeast Asia: Contesting Cultural Explanations, Researching Entrepreneurship.* Richmond, Surrey: Curzon Press, 2001, p. 103-104.

[39] Irene Jensen, *The Chinese in the Philippines During the American Regime: 1898-1946.* San Francisco, CA: R&E Research Associates, 1975, p. 31.

That international politics and economics cannot be separated in any real sense was evident during the American as with the Spanish colonial periods. America's quest for trade relations with mainland China greatly improved the bargaining position of the Chinese communities in the Philippines. With the most-favoured nation principle in the China-US trade agreement, China was able to negotiate the establishment of a Chinese Consulate in Manila. The Chinese community in the Philippines used this to gain favourable treatment from the US government in the Philippines by appealing directly to China.[40]

The free trade regime sustained the Philippine economy's role in the international division of labour as exporter of agricultural crops and supplier of semi-processed products. In the value-added chain, Philippine exports were at the bottom end. Free trade also led to Philippine economic dependence on the US market; it failed to increase productivity and transform the structure of the Philippine economy. Agriculture's share declined but the proportion of labour in agriculture declined very little, from 78 to 71 percent, and combined with low productivity of labour in agriculture, John Power and Gerado Sicat explain, this was a formula "for low *per capita* income in the Philippines."[41] The picture of the manufacturing sector was bleak. Power and Sicat have shown that the growth of manufacturing output was entirely explained by the growth of inputs, leaving no gain in total productivity. Neoclassical economists as they are, they were surprised and admitted they could not explain the results:

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[40] Edgar Wickberg, *The Chinese in Philippine Life, 1850-1898*. New Haven, CT: Yale University Press, 1965, p. 243. The improved bargaining position of Chinese businesses in the Philippines during the American era was demonstrated in two landmark cases in which the Chinese Chamber of Commerce played a very important role. The first was when Filipino legislators passed the Bookkeeping Act of 1921 and the nationalization of retail trade (Ibid., p. 206).

[41] Power and Sicat, *The Philippines*, p. 19.

> This may seem surprising in view of the importance of the 'residual' in calculations of this sort made for other countries. It seems to conflict also with the widely held view that improvements in education, health, and social organization, in the Philippines were substantial since the advent of American rule at the beginning of the century...We have no general explanation for this phenomenon.[42]

That they have no "general explanation" is not surprising. Neoclassical economists emphasize the contribution of physical capital stock and high rates of investment in human capital, such as education, as key causal factors for economic growth. Such an emphasis would explain Power and Sicat's bafflement as to why substantial improvements in education and health during the American rule did not have an impact on productivity. This, however, would not surprise NSI scholars as they consider investment in human and physical capital as necessary but not enough. Social capability improvements such as education would have little impact on productivity and the economy unless systematically integrated in the whole system of technology development, production, and commercialization. This requires manufacturing firms to learn how to use technology and innovation effectively, to develop new sets of skills, new ways of economic organization, and to familiarize and be competent with knowledge of new markets. All of these require risk taking, entrepreneurship and good management. Productivity is closely associated with technology and innovation (Chapters 1& 2).

A free trade regime was certainly the least likely policy to foster a culture of innovation. While an open economy favoured import-export and financial businesses as it made imports cheap, it also wiped out the rural-based textile industry. This industry accounted for more than 60 percent of total manufacturing in 1902, but was reduced to about 13 percent by 1938.[43] Moreover, a broad-based development is difficult to achieve in merchant and agricultural societies under a liberal trade regime. Although Philippine foreign trade grew from $23 million at the beginning of American rule to $275 million just before the outbreak of World War II, there was little benefit to the majority of the poor Filipinos. The free entry of American goods had deprived the Philippine treasury of the revenues needed to provide services for the people. The American government was unwilling to slap an export tax on the windfall profits of export crop plantation owners and millers, and Filipino legislators continually battled against any significant increase in taxation of agricultural lands or income.[44]

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[42] Ibid., p. 23.

When modern centrifugal milling technology was used in sugar plantations, there was no concerted effort to innovate in machinery for production. This pattern continued until the 1950s, when new industries were set up under the IS strategy.[45] That technological innovation was uncommon in industry was not really surprising. Except for the adoption of the principle of separation of church and state, the secular education system during the American period displayed more continuity than change. American education policy in the Philippines, Judith Raftery argues, was intricately linked with American domestic politics – the "growing Catholic influence in United States government."[46] She wrote: "The Republican administrations of Roosevelt and Taft needed Catholic support for their policies and, in order to win it, more Catholics would hold prominent positions. That strategy paid off."[47]

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[43] Norman Owen, 'Philippine economic development and American policy: a reappraisal', in Norman Owen (ed.) *Compadre Colonialism: Studies on the Philippines Under the American Rule*. Ann Arbor, MI: Center for South and Southeast Asian Studies, University of Michigan, 1971, p. 104-108.

[44] Ibid., p. 113.

[45] Laurence Davis Stifel, *The Textile Industry: A Case Study of Industrial Development in the Philippines*. Ithaca, NY: Southeast Asian Program, Department of Asian Studies, Cornell University Press, 1963, p. 91.

[46] Judith Raftery, 'Textbook wars: Governor-General James Francis Smith and the Protestant-Catholic conflict in public education in the Philippines, 1904-1907', *History of Education Quarterly* 38 (2), Summer 1998, pp. 143-164.

Political bargaining between American Catholics and politicians won crucial victories in the Philippines for the church, most notably, in colonial education policies. Responding to the demands of the American Catholics, Roosevelt placed more American Catholics in prominent positions in the Bureau of Public Instruction and hired more Catholic teachers and administrators as a protection against secular Protestantism.[48] [49] As soon as the war ended "mass education of the Filipinos was an important consideration in the minds of the Americans ... they believed that education was an effective way to pacify the people and restore peace and order."[50] The Thomasites derided their Catholic or Spanish priests counterparts whose "pedagogical techniques" in their view were "old-fashioned and mechanistic." They blamed the Spaniards for the 'indolence' or aversion of Filipinos to manual labor, thus the Thomasites took it as the "preamble of the Thomasite education" to promote the "dignity of labor." The image of an 'indolent native', they believed, justified their attempt to "shape the masses" to think that "economic salvation to be earned eventually would sustain them as a willing labor force, despite minimal financial incentives." The Thomasites were disappointed because, as they claimed, "the students' subconscious model was…to be a local bureaucrat, a "potentate" who would not carry home the lightest burden, including the little bag of currency containing his own salary", as Ms. Fee, a Thomasite, wrote in her memoirs.

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[47] Ibid., p. 163.
[48] Ibid., p. 153.
[49] Jane A. Margold, 'Egalitarian ideals and exclusionary practices: US pedagogy in colonial Philippines', *Journal of Historical Sociology* 8 (4), December 1995, pp. 375.
[50] Maria Guillen Acierto, 'American Influence in Shaping Philippine Secondary Education: An Historical Perspective, 1898-1978', PhD Dissertation. Loyola University of Chicago, 1980, p. 4.

Margold criticized the inability of the Thomasites to see beyond the 'indolence discourse' the reasons why Filipinos would have aversion to manual labor, if they did. The Filipino lower classes had already been toiling ceaselessly, the "peasants already worked unstintingly for minimal reward." The problem was structural, and if Filipino students aspired to become bureaucrats it was because the bureaucracy provided opportunity for some form of social mobility. As Margold aptly said:

> It did not occur to them [Thomasites] that a few years of US-style education would not equip their students to **challenge a structure of privilege growing ever more rigid as the colonial states' policies enabled the landlord class to consolidate its superordinate economic position** through the assumption of expanding political roles (emphasis added).[51]

The ultimate aim of education under the American rule was "to inculcate into the people a sense of civic responsibility and self-government" and make them conform to the political values of the US. As Dean C. Worcester, a member of the Philippine Commission, stated, for the sake of expediency "English should be used as the medium of instruction."[52] Guillen points out that the first phase of the education under the Americans was focused on free primary education and the introduction of industrial education (1901-1910). The training of Filipino teachers was facilitated with the establishment of the Philippine Normal School and the Manila Trade School.[53] The second phase (1911-1918) was a focus on trades education for economic development. A 1903 report of Secretary of Public Instruction stated "that next in importance after the creation of a supply of native teachers comes instruction in useful trades and the mechanical arts and sciences necessary for the industrial development of the country. It is confidently believed that besides giving the islands a supply of educated Filipino artisans and mechanics, it will compel a due regard and respect for the dignity of labor."[54] The end result of this policy was workers to make slippers, hats, baskets, and embroideries for exports.[55]

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[51] Margold, 'Egalitarian ideals', p. 387.

[52] Dean C. Worcester, *The Philippines Past and Present.* New York: The Macmillan Company, 1930, p. 400.

[53] With the goal of training Filipinos to become effective citizens, the emphasis was on reading, writing, arithmetic, English grammar, geography, history, music, physical education and industrial work.

In 1925, the Monroe Commission headed by Dr. Paul Monroe of Columbia University assessed the education system in the Philippines. The Report indicated that "the use of English created considerable handicaps to the instructional program", and "that the textbooks used were not adapted to the interests and capacities of the pupils." Moreover, as far as secondary education is concerned the Commission noted that "the large majority of the secondary school population was taking the academic curriculum which did not prepare them for life after graduation ... creating social and economic problems." Thus, the Commission recommended that training should be provided in agriculture, commerce, and industry.[56] The Philippine higher education system was organized along the lines of agriculture, commerce and industry as demand increased in agriculture, commercial and financial businesses. Most Filipinos went to school to learn English as the services of those who could transact business in English and correspond in English were in great demand both in the private and public sectors. "Knowledge of the English language was open sesame to the door of opportunity", as the Magsaysay Report stated.[57] Consequently, more Filipinos were drawn into secondary general and agricultural courses.

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[54] Report of the Philippine Commission, 1903, Part I, p. 84.
[55] Representing 91 percent of the total enrolment, in 1912 about 21,618 boys and 125,303 girls were enrolled in industrial schools in various parts of the country. Gardening, farming, housekeeping, slipper-making, embroidery, hats and basketry, fruit and vegetable preservation were taught. An increase in volume of exports of hats was observed, from 621,475 in 1912 to over a million in 1913.
[56] Survey of the Educational System of the Philippines, Manila, 1925.quoted in Acierto, 'American Influence', pp. 78-79.

That the trades school in the Philippines, unlike in the US and Britain (in the early years of these countries' development), did not attract Filipino students was not surprising. The Monroe Report criticized the industrial arts as being formal, mechanical, and ill-adjusted to community needs. But more than that the report in 1930 of Dr. Charles E. Prosser explained the reason why – There was "no special demand. Not surprisingly, the graduates went into other fields."[58] This indicates that during the American period industry remained marginalized. The solution should have been encouraging trades graduates to establish their own businesses. This, of course, requires government to provide institutional support other than education, such as credit and technology support. This was something far-fetched, however, to a government that was convinced that entrepreneurs are the creation of the market rather than government. Such a philosophy works in commerce and finance businesses, but not in industry and manufacturing where there are high risks. Modernization or industrial development requires a 'mental shift' in which dynamic technology-based local agriculture and industry, as a solid basis for capitalist accumulation, is valued.

Joseph Benjamin Van Hise pointed out that "no Commissioner made agriculture his special concern, and technical aid to farmers lagged."[59] He argues that "the Philippine Commission was nearly omnipotent...having powers to legislate and administer, to tax and spend," thus the Commissioners were presented "a magnificent opportunity" to develop a "master plan for using science and technology to reform the Filipino way of life." But the Commission just "let the opportunity slip by", or did it? The application of science and technology in American Philippines was focused on public health and transportation infrastructure, such as roads and ports with the primary purpose of "maximizing Americans' profit", while Filipino taxpayers paid for it, Van Hise argues. Afraid that the Americans would be severely affected by the diseases in the colony in epidemic proportions (e.g. cholera), the colonial government prioritized the importation of scientific and technological knowledge in medicine to the Philippines.

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[57] Report of the Magsaysay Committee on the General Education of the Philippines, quoted in Acierto, 'American Influence', p. 148.
[58] Arthur Carson, *The Story of Philippine Education: Vocational Education*. Quezon City: New Day Publishers, 1978, p. 64.
[59] Joseph Benjamin Van Hise, 'American Contributions to Philippine Science and Technology, 1898-1916', PhD Dissertation. The University of Wisconsin-Madison, 1957, p. 594, 592, 588.

Similarly, it was the colonial government's goal of making Manila "an American Oriental entrepot to rival Britain's Hong Kong" that led it to prioritize road construction and the application of technology. In his letter to all provincial and municipal officials, Governor Forbes stated: "The construction of a road immediately puts the vigor of life into the agriculture and industry of the region which it opens." Thereafter the area produces its specialty, and trades with the world for the rest, while living standards rise." As the Report of the Chief Road Engineer indicated, "Thenceforth top priority was assigned to those main thoroughfares in thickly settled and prosperous rural areas by which cash crops could be moved to ports and railheads." Nonetheless, "the purpose of Forbes' roadbuilding was not to open the wilderness, nor to link far cities, but to stimulate commercial agriculture where it already existed."[60] The College of Engineering was established at the University of the Philippines in 1910. However, except civil engineering which was needed in the construction of public infrastructure, survey and mapping, engineering education was not "actively promoted." Research in this field was largely related to "the quality testing of road stones or of railroad ties." The emphasis on civil engineering, however, paid off as the Philippines today, Posadas argues, "has a significant capability in this field. Philippine construction and surveying firms are carrying out projects in other countries."[61]

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[60] J.L. Murray, 'Roads in the Philippine Islands, Their Present Condition and Proposed Betterment', March 15, 1909 quoted in Van Hise, 'American Contributions', pp. 399-400.

Given the prospects for job in an export crop-, trade- and finance-based economy and a career in civil service, teaching or medicine, the demand for graduates was expectedly high in agriculture, liberal arts, law and business administration, and medicine and hygiene.[62] Filipino students did not go into engineering and natural sciences degrees because in an economy which imports manufactured goods, work demand in manufacturing, more so in industrial research, was nil. As Prof. Roger Posadas of the University of the Philippines notes: "There was practically no demand for research engineers and physical scientists. The emphasis was on agricultural and medical research. In the agriculture sector, "where American tools and methods were meant to improve production", Van Hise argues "the benefit accrued to the wealthy."[63] Subsistence farmers were "helped hardly at all by Forbes' ubiquitous public works, or by the English language publications of a remote Bureau of Agriculture." More importantly, the mechanization of agriculture or the irrigation of rice lands benefited only those with large landholdings especially that land reform was never the agenda of the American rule. "That Philippine prosperity depended upon profitable agriculture was recognized by the

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[61] Roger Posadas, 'The Philippines', in Saneh Chamarik and Susantha Goonatilake (eds.), *Technological Independence – The Asian Experience*. Japan: United Nations University Press, 1994, http://www.unu.edu/unupress/unupbooks/uu04te/uu04te0k.htm., Accessed 10 December 2006.
[62] Arthur Carson, *Higher Education in the Philippines Under the Spanish*, Bulletin 1981, No. 29. Washington: US Government Printing Office, 1961, p. 72.
[63] Van Hise, 'American Contributions', pp. 585.

Americans", Van Hise argues, but "their lack of a burning Proconsular concern that something be done for [ordinary] Filipino farmers" was what prevailed.

The American colonial government enforced laissez faire governance although it was, at the very core, developmental in its own country. As Van Hise points out "conservative Americans in 1900 did not assume that the government of a free society owed extensive aid to agriculture". Nevertheless, in the US the Federal government was "sponsoring agricultural education at land grant colleges and agricultural research at federal experiment stations" and ensured that farmers adopt technologies generated by these institutions.[64] "If their [Filipinos] methods were to improve", Van Hise argued, "they had to be shown better ones, and shown them impressively that they would adopt them." Moreover, smallholder Filipino farming was faced with complex structures which impeded them to engage in profitable farming. Accessibility to credit for capital investment was a huge problem for the small farmers. The colonial government required farmers to produce American land title based on scientific survey of metes and bounds in order to obtain loans for farm improvement. But this, according to Van Hise, was "technologically and legally absurd" under Philippine conditions where ancestral farm plots are located in heavily populated areas, unlike the "unpeopled American West." Unlike the Japanese, integrating experimental farms, agricultural education and extension, and credit system was not done by the Americans. A strong field extension service to bring useful information to farmers was "only tentatively attempted." Efforts to perfect a hemp stripping machine had failed. The government was also slow to guarantee the quality of exported hemp through compulsory grading by government inspectors. As Van Hise points out, "the Americans in the Philippines duplicated tardily the agricultural services of the Federal Government in the continental United States." But "they [Americans] were sure that they had aided export-agriculture by building port works, railways and first class roads."

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[64] Ibid., p. 572- 576.

Cosmopolitan political economic forces without the vital emotional link with the poor and dispossessed Filipinos had no intention to develop the industry sector because the present structure of the economy ensured them of a profit-making business activity. Private American investors were not interested, and Chinese capitalists saw "greater returns in trade, in usury, or through engrossing the insular rice or lumber supply."[65] This was a stark contrast to a dynamic agriculture and industrial economy that Rizal, Bonifacio and their nationalist compatriots had envisioned (Chapter 3). They understood that a nation has two domains – the material and the spiritual and that the introduction of "machines and industries' (as articulated in the *Liga's* Constitution) was vital in building a self-sufficient economy and in providing opportunities for mobility to the Filipino people. Political independence was meaningless when not accompanied by economic independence which, in turn, could be achieved through economic nationalism. Greenfeld posits that nationalism influences rulers of a nation to embark on a capitalist or industrial path of economic development because of its competitive nature – that strong sense of competition among nations for economic prosperity (Chapter 2).

Economic nationalism is the intentional promotion of economic interests of the nation through a system of production and services that is oriented towards activities of increasing returns (Chapter 1). Colonialism distorts this path. Reinert points out that in 19th century-Europe, those whose interest was in the export of raw material could form an alliance of 'feudal' agriculture sector and foreign powers. Following this pattern, Reinert argues that "England supported the 'free trade' and slaveholding South in the American Civil War against the industry-building and anti-slavery North." But he notes that this kind of power struggle was fought much earlier in 16th-century Spain where urban artisan and industrial sectors fought against the old regime during the Revolt of the Comuneros in 1521-1522, and the agrarian South won, leading to an early case of de-industrialization in Segovia.[66] It is possible to argue that the same could have potentially happened to the 18th-century US had the Americans not succeeded in gaining independence from the British Empire. Because they succeeded, the American government was able to build its national productive powers. The discussion below is another illustration of a country which successfully industrialized because it transformed an agrarian and mercantile economy into industrial (sub-section 4.3).

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[65] Ibid., p. 577.

4.1.1 The Japanese colonial legacy

The post-Spanish scenario in the Philippines presented Japan as a contending Asian power against the US and likely the champion of Asian liberation. Nationalist forces in the Philippines until the early years of American colonial rule viewed Japan with admiration as a model nation-state. In fact, Japan was a sanctuary for "Filipinos who had fled from Spanish persecution [and] had been welcomed there and given the full protection of the law."[67] When the Philippine-American war was looming, Gen. Emilio Aguinaldo, through Mariano Ponce, solicited Japan's help and was received by Japan's

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[66] Reinert, *How Rich Countries Got Rich*, p.84.

[67] Gregorio F. Zaide, *Philippine Political and Cultural History*. Manila: Philippine Education Co., 1957, p. 159.

Premier, Okuma Shegenobu in 29 June 1898.[68] Lydia Yu-Jose points out that Japan, at first, maintained "a low posture officially."[69] However, unofficially, Japan lent support to the Philippines with many Japanese officers serving as military advisers in the General Staff of Aguinaldo's revolutionary government, which Ponce, in his visit to Japan to procure military supplies, had arranged.

Yu-Jose asserts that "neither the United States nor Japan was willing to risk its commercial interests in Asia." The talks in Washington about neutralization[70] were just to buy time until the US had come up with a policy of preserving its interests in Asia, without provoking Japan. The Japanese, on the other hand, were quiet about it in the 1920s, and in the 1930s openly supported neutralization because they were supportive of Philippine independence and were against the continuation of an American naval base and the special trade relationship between the Philippines and the US.[71] Japan was in the Philippines even before American rule, and with the Shidehara Diplomacy of the 1920s, Japanese immigrants, investments, and trade increased in the Philippines.[72] Yoshiko Nagano tells us that trade was "an important aspect in the development of Philippines-Japan relations…during the seventy-year period from the latter half of the nineteenth through the first half of the twentieth centuries, within the context of intra-Asian trade."[73] Japanese immigration contributed to the development of the Philippine economy, especially the skills they brought to the abaca industry, fishing, manufacturing, and mining. But this also had negative political repercussions in the sense that Japan had always been held under suspicion for latent political and military expansionist intentions due to its acquisition of Formosa (Taiwan) and the annexation of Korea.[74] The increasingly negative attitude of the Filipinos was a puzzle given that Filipino nationalists during the revolutionary period and some years later had laid their hope of redemption with the Japanese. However, during World War I the Filipinos took the side of the Americans and showed unquestionable loyalty. In fact, Governor-General Harrison was so elated:

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[68] Quibuyen, 'Imagining the Nation', p. 625.

[69] Lydia Yu Jose, 'Philippine, American, and Japanese relations as seen through the issue of neutralization, 1900 to 1939', in Ikehata Setsuho and Lydia Yu Jose (eds.) *Philippines-Japan Relations*. Quezon City: Ateneo de Manila University Press, 2003, p. 47.

[70] 'Neutralization' means the signatories to a treaty are obliged to respect and safeguard the territorial integrity of a neutralized state, and are either obligated or not to come to defense of the neutralized state if attacked by another power.

[71] Yu Jose, 'Philippine, American, and Japanese relations', p. 70.

[72] Ibid., p. 54-55.

[73] Yoshiko Nagano, 'Philippines and Japan in the intra-Asian trade, 1868-1941', in Setsuho Ikehata and Lydia Yu Jose (eds.) *Philippines-Japan Relations*. Quezon City: Ateneo de Manila University Press, 2003, p.81.

> All through the war, we had not the slightest anxiety about the attitude of the Filipinos, and little concern over internal affairs in the Philippines…Every sentiment, every impulse, every hope of the Filipinos was enlisted in the cause of the United States. Support of the government appeared unanimous…The loyalty of the Philippines meant, at the very least, freedom from worry and concern on the part of the home Government at the time of its greatest responsibilities…This was the spirit that made it possible to withdraw American soldiers and American naval vessels from the Philippines during the war, and leave it to the Filipinos the privilege of defending American interests and the American flag.[75]

The Filipinos' loyalty to the Americans and 'hatred' of the Japanese was peculiar because in other Southeast Asian countries, such as Indonesia and Malaysia, the local élite collaborated with the Japanese to overthrow the Dutch and British, respectively. They viewed the Japanese as their liberators without compromising their nationalism. In fact, the Japanese occupation, Anthony Reid points out, provided the opportunity for Indonesian nationalists, Sukarno and Hatta, to spread nationalism to the Indonesians and give the nationalist leaders invaluable experience in government administration.[76] Quibuyen explained the difference in the Filipino response as the result of American 'benevolent assimilation' strategy where more concessions, rewards and patronage were handed out to the Filipino élite than Spain did in all its 300 years of colonial rule.[77] On December 8, 1941 when Japan attacked the US naval base at Pearl Harbor, the Philippine invasion also began. The country was already a commonwealth and the preparation process for national independence promised by the US to be implemented in July 4, 1946 was ongoing so that, as Ikehata argues, "Japanese justification for its occupation namely, liberation from Western rule, had very little appeal" to the Filipinos.[78] Ikehata was of the opinion that "what caused the failure of various Occupation policies created by the Japanese was in many cases the opposition mounted by the guerrilla resistance movement" and for her "the struggle of the anti-Japanese guerrillas was an act of patriotism deserving a place in Philippine national history."[79]

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[74] Ibid.

[75] F.B. Harrison, The cornerstone of Philippine independence, pp. 182-183, quoted in Zaide, *Philippine Political and Cultural History*, p. 253.

Satoshi Nakano argues that there were rather "unique features characterizing Japan's occupation of the Philippines in comparison to its occupation of other countries in the region" – it was characterized by "appeasement and coercion."[80] It was a policy wherein at the national level the *ilustrado* political élite were appeased but at the local level a policy of coercion using violence, massacre, abuse and plunder was pursued. A policy of 'appeasement' was defined by Nakano as "an attitude of self-restraint on the part of the Japanese within subjectively determined limits which they thought could persuade Filipinos to cooperate in Japan's war effort, and secondly, the idea that the Filipino people should remain aloof from a conflict supposedly involving only Japan and the United States, and instead adopt a "wait and see" attitude."[81] Ideologically, Japan, under Prime Minister Tojo Hideki, promoted "building the new Philippines" and the Japanese government promised independence provided that "it [the Philippines] understand and comply with the true intentions of the Empire and cooperate as a part of our new East Asian order."[82] On May 5, 1942, the Prime Minister stated in a speech before a crowd of Filipinos in Luneta: "you Filipinos today are going to wipe away your mistaken Americanism…and return to your true character as a nation of great East Asian origin", and added "we urge you all to cooperate in winning the Greater East Asian War more actively…and be invested with the crown of national independence as quickly as possible."[83] However, Nakano points out that "the realpolitik of the Japanese occupation could be described as nothing more than keeping the 'old Philippines' (i.e. prewar institutions) intact." There was a "remarkable continuity of prewar political leadership under the Occupation" wherein those "who participated in the collaboration government (plus Quezon and Osmeña)…were all political administrative veterans with years of experience under U.S. colonial rule." Nakano has further shown that there was "not a structural change but a change of generation that the Japanese invasion and occupation brought to Philippine national politics in 1942." These Filipinos were the first generation of Americanized *ilustrados* "to advance into the world of politics and business after being educated under the American colonial regime." Instead of Spanish-speaking *ilustrados*, "they are the English-speaking 'young provincials' for whom the world had narrowed to the confines of the United States."[84] The Japanese officials, in one document written in 1944, 'Recent Conditions in the Philippines', had to admit the fact that "in the Philippines even after independence – which was supposed to have been granted on the condition of change and full collaboration – "pro-American ideas are still widespread and stubbornly upheld within every social strata and class, and cannot be extracted." Nakano was of the opinion that such an admission signifies, in a sense, "that Japanese military had actually acquiesced to the existence of a 'pro-American' élite in the Philippines."[85] It shows the strength of Americanized psyche of the Filipinos.

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[76] Preston, *Rethinking Development,* p. 202; Anthony Reid, 'Indonesia: revolution without socialism', in Robin Jeffrey (ed.) *Asia – The Winning of Independence*. London: Macmillan Press Ltd., 1981, p. 134-140.

[77] Quibuyen, 'Imagining the Nation', p. 612.

[78] Setsuho Ikehata, 'The Japanese occupation period in Philippine history', in Setsuho Ikehata and Ricardo Trota Jose (eds), *The Philippines Under Japan: Occupation Policy and Reaction*. Quezon City: Ateneo de Manila University Press, 1999, p.3.

[79] Ibid., p. 6. When the Japanese military administration was established in Manila on January 3, 1942, the USAFFE (United States Army Forces in the Far East) which incorporated the Commonwealth government's standing army into the US army stationed in the Philippines was still engaged in battle with the Japanese in Bataan peninsula which was established as a line of defense. When the USAFFE force finally surrendered on May 6, 1942 to the Japanese in the island of Corregidor, anti-Japanese resistance guerrilla movements spread.

[80] Satoshi Nakano, 'Appeasement and coercion', in Setsuho Ikehata and Ricardo Trota Jose (eds.), *The Philippines Under Japan: Occupation Policy and Reaction*. Quezon City: Ateneo de Manila University Press, 1999, pp. 21-58.

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[81] Ibid., p. 22.
[82] Ibid., p. 23.
[83] Ibid.

Ikehata points out that at the time of the initial US forces' landing in Leyte in October 20, 1944 until the Japanese surrender, the nationwide war resulted in such large-scale Filipino civilian casualties that, as Ikehata describes, "the end of the Japanese occupation found the Philippines in a state of exhaustion, devastation, and chaos." With an economy completely dysfunctional and paralyzed and the country's farmlands and infrastructure in ruins, and the people starving, "the collective memory of the Filipino people" of the Japanese occupation for three years and eight months was that "it was the darkest period" of the nation's life on which was "etched an indelible mark of cruelty".[86] She further argues that "the Japanese occupation blocked and even retarded the future of the Philippines" because "all of the institutions planned by the Commonwealth government for the purpose of realizing an autonomous economy and the infrastructure supporting it were destroyed during the Occupation". With a country that was completely in ruins, the negotiating ability of the Filipinos for independence under the American colonial government was severely constrained. Ikehata underscores a debilitating consequence of the Japanese Occupation:

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[84] Ibid., pp. 26-27.
[85] Ibid.
[86] Ibid., p. 18.

> Ultimately, what the Occupation did was to increase and strengthen the Filipinos' economic dependency on the United States that they had experienced before the war…This dependency on the United States…extended beyond politics, the economy, and military assistance to the very consciousness of the Filipino people…The ultimate paradox of the Japanese occupation of the Philippines is how its initial intent, real or imagined, to liberate the country from U.S. colonialism was turned completely upside down, resulting in the actual strengthening of Philippine dependency on the United States. The Filipinos' hope in, and loyalty to, the United States was heightened during the Japanese occupation. For the Filipino people, it was only the U.S. reoccupation of their country that could free them from the cruelty and indignity they were suffering under the Japanese army… Therefore, the historical view which claims that the occupation of Southeast Asia by Japanese forces during the Pacific War ultimately furthered national independence in the region is untenable in the case of the Philippines.[87]

'Benevolent assimilation', even though in actuality was it racist and exclusionary, effectively incorporated a cosmopolitan Filipino élite as integral part of the US colonial structure and rendered the short Japanese occupation of the Philippines unsuccessful. The most damaging impact of the Filipino-American politico-ethical élite was its success in concocting 'official nationalism', which stamped out popular nationalism, systematically distorting nationalist collective meanings. If Spanish colonialism was the womb which nurtured Filipino nationalism, American colonialism was the midwife of its abortion.[88] Spanish, American and Japanese colonialism in the Philippines created the exact opposite situation to South Korea and Taiwan: extreme patterns of land ownership and social stratification. As Rafters points out: "In the Philippines, US notions of equality did not lead the colonizing nation to a radical redistribution of land, and the provision of access to credit, irrigation, capital and labor which might have eradicated tenancy and poverty."[89] Indeed, 'benevolent assimilation' was never intended to assimilate the Philippine economy and make it an equal player in the capitalist world economy. The Philippine bureaucracy was never modernized and has remained traditional in its strategies for wealth accumulation. The failure of the American colonial government was that no concerted effort to integrate the system of technology, innovation, production, extension, marketing, and credit was undertaken. Land reform was not implemented and the rural infrastructure established was not extensive, and incentives to induce tenant-farmers to employ technology in crop production were absent. Thus, a capitalist transformation of the agrarian economy was not realized in the Philippines. This is a crucial factor to consider, especially as recent studies have evinced that a technology-based and highly productive agriculture sector is key in the timing of the shift from an agrarian to an industrial society, and in effectively reducing poverty. [90]

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[87] Ibid., p. 19.

[88] For a discussion of how the colonial agenda came to fruition, a reading of Quibuyen's *A Nation Aborted* is suggested.

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[89] Margold, 'Egalitarian ideals', p. 385.

[90] See the studies of Douglas Gollin, Stephen Parente, and Richard Rogerson, 'The role of agriculture in development', *American Economic Review* 92 (2), 2002, pp. 160-164; Ola Olsson and Douglas Hibbs, 'Biogeography and long-run economic development', *European Economic Review* 49 (4), 2005, pp. 909-938. Colin Thirtle, Lin Lin, and Jenifer Piesse, 'The impact of research-led agricultural productivity growth on poverty reduction in Africa, Asia and Latin America', *World Development* 31 (12), 2007, 1959-1975; Martin Ravallion and Gurav Datt, 'When is growth pro-poor? Evidence from the diverse experience of India's states'. World Bank Policy Research Working Paper Series, 2263, World Bank, Washington, D.C., 1999.

4.2 The American nationalist historic bloc and a culture of innovation

This section discusses the role of a nationalist historic bloc in creating the hospitable social environment in which political and cultural (forces?) influences nurtured the innovative and productive powers of the US early in its developmental path. Triggered by colonial resentment of English commercial policies, attempts to establish feudal rule, and the lack of American participation in political decisions that affected their interests, the American Revolution erupted from 1775-1782 which led to the subsequent birth of the American nation. For most Americans, English policies prevented the development of American trade and industry. America declared independence in 1776 and the US escaped from the blight of colonialism. The Revolution put an end to a "colonial monarchical society", and "patronage and kinship of the 'gentlemen' elite" would no longer govern social, political, and economic relations.[91]

Between 1840 and 1860 a fundamental transformation of the American economy took place, with employment in the manufacturing sector tripled and production increased almost fivefold. It was generally regarded as the turning point from a commercial-mercantilist economy to an industrial-capitalist one.[92] David Meyer argues that this transformation was fuelled by a dynamism in which manufacturing in the industrial-commercial core regions around Boston, New York, and Philadelphia was stimulated and, in return, was also reinforced by a steady, innovative and increasingly productive agricultural production for local markets. This kind of dynamism, of course, is explained by Gunnar Mrydal's "principle of circular and cumulative causation" in which the tremendous inertia and temporal compounding of advantages, Allan Pred suggests, became "the initial advantage" that drives self-perpetuation.[93] These rural/urban economic linkages were the result of farmers taking advantage of the market demand for farm products, while absorbing and stimulating production of consumer goods such as cloth, shoes, and iron. This reinforcing dynamic set the stage for rapid urban industrial growth in the East by the 1840s.

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[91] David Meyer, *The Roots of American Industrialization*. Baltimore: Johns Hopkins University Press, 2003, 10.

[92] Allan Pred, 'Industrialization, initial advantage and American metropolitan growth', *Geographical Review* 55 (2), April 1965, p. 160; Meyer, *The Roots of American*, pp. 2, 6,8.

In 1776, the birth of the American republic raised thorny issues related to social and economic development which became central to the intellectual and political debate of the time among the founding reformers. The two competing nationalist visions which dominated the debate were those of Benjamin Franklin and Alexander Hamilton. Franklin and other like-minded republicans, such as Thomas Jefferson, envisioned a prosperous America whose growth would be largely supported by agricultural exports with manufactured goods supplied through imports.[94] On April 6, 1776, free trade was implemented on the basis that "agriculture and foreign commerce were partners in a marriage that promised individual as well as communal prosperity." The US was engaged in trading transportation services for goods from West Indies, South America, and Asia for re-export to Europe. American foreign trade expanded significantly from 1790 to 1807. However, the carrying trade contributed little to the income growth of the country.

On the other hand, Hamilton envisaged a different path for America's development – an 'American system' where there was a "division of labor between agriculture and manufacturing" and the reinforcing dynamic between the two sectors would produce greater productivity through specialization and gain from exchanging surpluses. The 18th- century Confederacy was in present parlance 'developmentalist' in orientation. Marc Eisner points out that the expansion of state authority in the early republic provided a means of establishing greater opportunities for economic action. The US government was "never truly wedded to the principles of laissez faire but used its powers, where possible, to promote domestic commerce, industry, and economic growth." Nationalism, expressed in the desire of the revolutionaries to build a strong America, dominated policy.[95] The visionary leaders realized that potential growth was limited so long as it was based exclusively on commerce.[96] Issues such as tariffs, monetary, and the financial system topped the list.[97] In 1791 Hamilton, as Treasury Secretary, presented Congress with his *Report on Manufactures*, which among other things called for a system of protectionist tariffs to stimulate the growth of particular infant industries. Thinking that economic transformation was largely hindered due to physical and economic fragmentation, the visionaries, through the Constitution of the US established a strong central government with powers to forge a national economy. The Constitution granted Congress exclusive power to regulate foreign and interstate trade, created monetary union with the central government controlling the currency, and established the basis for national laws to protect commercial credit and to permit businesses to issue public securities to finance trade and production.[98] In the same year the Tariff Act and the Tonnage Act were passed by Congress. The latter discriminated against those ships that were not built in America and not owned by Americans. By 1817, foreign ships were disallowed completely from coastal shipping, thus reserving this lucrative business for American ships.[99]

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[93] Gunnar Myrdal, *Rich Lands and Poor: The Road to World Prosperity*. New York: Harper, 1957, p. 13; Pred, 'Industrialization', p. 160.

[94] See, for example, Drew McCoy, *The Elusive Republic: Political Economy in Jeffersonian America*. Chapel Hill: The University of North Carolina Press, 1980.

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[95] Ibid., p. 73.

[96] Eric Lampard, 'The history of cities in the economically advanced areas', *Economic Development and Cultural Change* 3, 1954-1955, pp. 81-136.

[97] See, for instance, Richard Bensel, *The Political Economy of American Industrialization, 1877-1900*. New York: Cambridge University Press, 2000.

[98] Richard Sylla, 'Financial systems and economic modernization', *Journal of Economic History* 62 (2), June 2002, pp. 277-292; Meyer, *The Roots of America*, pp. 16-17.

Manufacturing investments have high minimum capital requirements, and because of the long gestation period before such investments yield profit, the availability of long-term capital was seen as essential to the success of an industrialization-led growth strategy. Richard Sylla argues that Federalist policies placed great emphasis on the role of credit and finance in America's economic transformation. [100] Fixing America's financial system was the more immediate and significant accomplishment of the first Federalist administration in the early 1790s, which Sylla calls "the Federalist financial revolution." The well-designed and -implemented financial innovations, encouraged particularly by Hamilton, created the US dollar as the national currency, the central bank (owned in part by government with nationwide branches but later destroyed by the Jacksonians in the 1830s), financial and non-financial limited-liability corporations, and a number of interconnected securities markets generating liquidity from securities issued by federal, state and local governments. The impact of the financial system was on infrastructure and industry as insurance companies and non-bank financial corporations began to appear along with non-financial corporations, chartered to build roads, bridges, canals and turnpikes, and charging tolls to defray costs. Government coffers were also tapped as sources of capital.

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[99] Marc Allen Eisner, *The State in American Political Economy: Public Policy and the Evolution of State-Economy Relations*. New Jersey: Prentice Hall, 1995, pp. 16-17, 72-73.
[100] Sylla, 'Financial systems', pp. 277-292.

Nonetheless, capital, especially working capital was supplied by various sources. By 1865 the attention of wholesalers from Boston, New York, Philadelphia and other mercantile cities was "no longer focused primarily upon foreign commerce", and had instead forged alliances with industrialists by providing long-term credit, marketing and distribution services.[101] Commercial banks mostly made long-term loans, and with the rise of the factories, capitalism deepened.[102] Industrialists in prosperous agricultural areas in Connecticut and elsewhere competed for the same market demand and supply of capital so that technological innovation was adopted as a strategy, by "inventing new products or improving on existing ones and by inventing new ways of making products to boost productivity or improving on those they already had."[103]

Evidently, Meyer argues, proto-industry or the universal practice of home production was not a deterrent but a stimulus to northeastern merchants. Zorina Khan and Kenneth Sokoloff point out that during the early industrialization technological change was "substantially due to increased investments in inventive activity of individuals whose 'schemes of practical utility' were driven by "higher perceived returns, or by demand-side incentives in general."[104] Being market-driven, inventive activities tended to originate "disproportionately from geographic areas linked to extensive markets", thus concentrated in the Northeast, and especially in Southern New England and New York, where low-cost transportation networks had facilitated a rapid expansion of commerce early in the antebellum period. Moreover, the inventors were not necessarily machinists and engineers with exceptional technological skills; most of them were merchants, manufacturers, farmers, and others from less technical occupations. They were, however, very entrepreneurial and responsive to "perceived demand and economic incentives." Of course, the early innovation activities worked "within an environment of rules and regulations". In his first address to Congress, George Washington urged the delegates to encourage "the exertion of skill and genius" by establishing "a national system of patenting" for he believed that inventive activity is induced by "offering inventors the right to appropriate returns on their efforts" through patent protection. Thomas Cochran argues that "the compelling urge to do things with less human work" and a "favourable legal and fiscal environment for entrepreneurs" were among the important factors in explaining the growth of innovation in construction materials, woodworking machinery and shipbuilding industry in 18th-century Philadelphia to meet the needs of the expanding agricultural hinterland and the coastal trade.[105]

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[101] Edward Chase Kirkland, *Men, Cities and Transportation: A Study in New England History, 1820-1900, vol. 2*. Cambridge, MA: Harvard University Press, 1948, p. 268.
[102] Meyer, *The Roots of American*, p. 60; Jeremy Atack, Fred Bateman and Robert Margo, 'Capital deepening and the rise of the factory: the American experience during the nineteenth century', *Economic History Review* 58 (3), August 2005, pp. 586-95.
[103] Meyer, *The Roots of American*, p. 64.
[104] B. Zorina Khan and Kenneth Sokoloff, ' "Schemes of practical utility": entrepreneurship and innovation among "great inventors" in the United States, 1790-1865', *The Journal of Economic History* 53(2), June 1993, p. 305, 290, 294. 303.

As scientific or innovative spirit is a major factor in industrial development, it was not surprising that manufacturing took root in the English colonies in the Northeast.[106] From the 1790s through the 1860s technological innovation powered growth and change in the industrial system. The economic development that ensued was uneven across three major geographic regions – an advanced and developing industrial core in the north, a rapidly settling western frontier, and a relatively stagnating southern periphery.[107] These distinct regional economies engaged in different forms of production, each with a unique set of interests and stakes in public policy. The American system was designed to promote development in the northeast and west which, in large part, was in conflict with the interests of the south. In fact, this conflict was settled in the American Civil War (1861-1865).[108] It was interesting that from the late 18th through the late 19th century America was predominantly characterized by localism (or regionalism), not nationalism.[109] In Daniel Walkowitz's words "the local community constituted the main arena of intellectual, social and political life", confirming Robert Weibe's assertion that America was a society of "island communities".[110] However, this system broke down after the 1870s with the success of the hegemonic capitalist ideology – that of the quest for 'good life'. The values of different economic, social, ethnic and religious groups harmonized toward leisure, consumption, and affluence.

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[105] Thomas Cochran, 'The culture of technology – an alternative view of the industrial revolution in the United States', *Science in Context* 8 (2), Summer 1995, pp. 325-339.

[106] Chris Freeman, 'Continental, national and sub-national innovation systems – complementarity and economic growth', *Research Policy* 31 (2), 2002, pp. 198-9; Dirk Hoerder (ed.) *Labor Migration in the Atlantic Economies: The European and North American Working Classes during the Period of Industrialization.* Westport, CT: Greenwood Press, 1985.

[107] Bensel, *The Political Economy,* p. 99.

Abraham Lincoln popularized the now famous 'American Dream' which encapsulates a nationalist policy guided by a 'social evolutionary' philosophy. This supported American industrialization, benefiting the majority of society by promoting a progressive tax system that supported income and economic security for middle class families without restricting the ability of successful businessmen to gain wealth. The "social evolutionary" idea of progress was based on the image of a "self-made man of America" where, according to Lincoln, "The prudent penniless beginner in the world labors for wages awhile, saves a surplus with which to buy tools or land for himself, then labors on his own account another while, and at length hires another new beginner to help him. This is the just and generous and prosperous system which opens the way to all, gives hope to all, and consequent energy and progress and improvement of condition to all."[111] Embracing Clay's nationalist vision, President Lincoln (1861-1865), a Republican, thought that by the standards of this time, America needed an "activist government" – a government that "clears the path" for men to achieve economic success. According to Norton Garfinkle, Lincoln understood the phrase "clearing the path" to mean "more than government getting out of the way"; it was a frontier metaphor, suggestive of the hard work of clearing forest for a farm or a road, pulling stumps and rocks out of the ground with teams of oxen".

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[108] Eisner, *The State in the American*, p. 77.

[109] See, for example, Susan Hirsch, *Roots of the American Working Class: The Industrialization of Crafts in Newark, 1800-1860*. Philadelphia: University of Pennsylvania Press, 1978; Daniel Walkowitz, *Worker City, Company Town: Iron and Cotton Worker Protest in Troy and Cohoes, New York, 1855-84*. Urbana: University of Illinois Press, 1978.

[110] Robert Weibe, *The Search for Order, 1877-1920*. New York: Hill and Wang, 1967.

In his pathbreaking work, Philip Scranton re-evaluates the course of industrialization in the US from the 1860s to the mid 1920s.[112] The emerging American industrial system was more complex than the much touted rise of large vertically integrated corporate firms engaged in moving assembly lines manned by semiskilled or unskilled workers. American industry was a mix-match of custom, bulk, batch, and mass production systems.[113] In his more nuanced account of America's industrial development, Scranton examines the role of smaller companies with customized and small batch production. Instead of price competition driven by technology-fanned economies of speed and scale, specialist furniture, textiles, and machine building adopted business strategies to limit price competition by keeping consumers focused on quality, style, and product innovation.[114] He points out that these small firms, mostly family businesses, were highly innovative and employed prized skilled workmen who could respond flexibly to variations in demand. These workers, in the words of Scranton, fashioned "endless novelty" which catered to the demands of the rising middle-class consumers who wanted variety in designs of such items as carpets, furniture, jewellery, cutlery, hats and ready-to-wear clothing that could be supplied by flexible modes of production. By 1890 the production of specialized goods had grown fast, contributing a third of national output in 1909, adding more value (tripling in 1923) and employing more skilled workers.[115] David Nye argues that flexible modes of production "matched the explosive growth of mass production, but by different means."[116] Nye maintains that this was not because of "the 'visible hand' of visionary managers guided by scientific experts".Instead, at the centre of the highly innovative production system were "skilled workers, technologically adept owners, and competing systematizers, of whom Taylor [Taylorism] was but one." Nye was right that the 'invisible hand' of market engendered a dynamic system as far as those institutions directly associated with the main sources of innovation are concerned. But the broader social environment in which these narrow institutions were embedded, particularly the political and cultural influences, as well as economic policies which helped determine the overall scale and direction of all innovative activities, were all established by the earlier visionary founding leaders of the US (Chapter 2).

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[111] Norton Garfinkle, *The American Dream vs. The Gospel of Wealth: The Fight for a Productive Middle-Class Economy*. New Haven: Yale University Press, 2006, p. 29.

[112] Philip Scranton, *Endless Novelty: Specialty Production and American Industrialization, 1865-1925*. Princeton, NJ: Princeton University Press, 1997.

[113] 'Custom industries' produce products only upon specific orders from customers, such as special order furniture; 'batch industries' manufacture products based on aggregate orders, such as machine tools and specialty chemicals; 'bulk industries' manufacture relatively technically simple items such as hardware or clothing. They make large quantities of goods at a time and often compete on price rather than on uniqueness. 'Mass- producing industries' generate large production runs, but they invest heavily in technology and must sell large quantities of items, such as automobiles and oil refining to justify the capital costs. See Michael Wald, 'Review- Specialty production', *Monthly Labor Review* 121 (7), July 1998, pp. 67-68.

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[114] Thomas Misa, 'Review- Endless novelty: specialty production and American industrialization, 1865-1925', *American Historical Review* 104 (4), October 1999, pp. 1307-1308.
[115] Scranton, *Endless Novelty*, p. 17.
[116] David Nye, 'Review – Industrial Revolutions- The One Best Way: Frederick Winslow Taylor and the Enigman of Efficiency by Robert Kanigel and Endless Novelty: Specialty Production and American Industrialization by Philip Scranton', *Nature* 391 (6664), January 1998, pp. 242-243.

Scranton points out that certain types of industries tend to agglomerate in certain regional centers, such as the textile industry in Philadelphia, machine tools in Cincinnati, jewellery in Providence, furniture manufacturing in Grand Rapids, and publishers and printers in New York City. Part of the explanation is that "these clustered industries could obtain skilled labor and auxiliary firms that supported their industry, by locating close to each other." Thomas Misa points out that "the manufacturers' capacity for collective action, typically on a regional, rather than national basis, figure in most of the successes." Wide-ranging institutions played a key role, such as, for example, the cooperative warehouse-showroom for furniture makers in Grand Rapids which spanned the gap between manufacturers and buyers, and labor-exchanges to fill workers' immediate needs and ensure that valuable skilled workers remained in the district, such as in the Cincinnati machine tools industry.[117] The supply of skilled labor was provided through educational initiatives, such as the University of Cincinnati's pioneering cooperative courses, common apprenticeship systems, training plans, and school programs for the machine tools industry. The social networks of personnel and firms provided the means to acquire new technology. Those types of contacts maximized the diversity of information and opened new possibilities for contacts. The metalworking skills supported growth and technological change in the new industries. At the same time, the new industries added to the richness of metalworking skills.[118]

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[117] Mansel Blackford, 'Review- Endless Novelty: Specialty production and American industrialization', *Journal of American History* 85 (2), September 1998, pp. 628-629.

[118] David Meyer, 'Steam engines from the elite: American technological change', *Journal of Economic History* 58 (2), June 1998, p. 559.

The construction of an extensive industrial workforce, increased technological complexity, and urban patterns of life would not have materialized without the influence of the education system.[119] Educational networks, comprising universities, rural parishes (providing lodging houses to travellers, pastoral visits) and social, religious and political organizations, were the main medium of information exchange. Joseph Watras notes that the educational system established in the US, especially in the Northeast, was more in line with developments in Europe.[120] More specifically, "the new patterns of education prepared people to adjust to the social changes taking place". For instance, teacher training was incorporated in the academies to strengthen "the place of vocational training in higher education", which allowed graduates to acquire "the education needed to move from rural areas to cities and take up occupation not found on farms." Academies did not offer college training but provided a variety of curriculum options to learn Greek and Latin to enter a college such as Harvard or take up practical courses, such as geometry and science to develop habits of industry. At the heart of the educational system was the enhancement of small private businesses. There were more than 6,000 academies established during the eighty years that began with the War of Independence and ended with the American Civil War. By 1860, the percentage of people in towns or cities rose to 19.8 percent and the percentage of workers involved in non-agricultural work rose from 28.1 percent in 1820 to 41 percent in 1860.

It must be emphasized that alongside flexible modes of production was the mass production system dominated by a growing number of large corporations. Between 1880 and 1915 was a critical period in the relationship between science and practice, as theoretical knowledge, especially in electromagnetism and organic chemistry, generated new manufacturing techniques from industrial research. Robert Kargon and Scott Knowles argue that new concepts of higher education in the US helped to shape the connection between science and industry, depending on the kind of industry and the relationship between institutions of higher learning and industry.[121] For example, from the 1860s, technical schools shifted their focus from traditional shop work to more modern laboratory-based scientific instruction, especially in Cleveland and Chicago, as cities were undergoing rapid growth in research-intensive industries, such as electricity and chemicals. However, in Pittsburg, where the urge to innovate in the steel industry was weaker, the pressure to innovate in education was less.

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[119] David Baker, 'Schooling all the masses: reconsidering the origins of American schooling in the postbellum era', *Sociology of Education* 72 (4), October 1999, pp. 197-215.
[120] Joseph Watras, *A History of American Education*. Boston, New York, and San Francisco: Pearson, 2008, pp. 69, 73, 84.

Leonard Reich points out that during this period, "American social, economic, and institutional conditions discouraged the pursuit of knowledge for its own sake".[122] The belief in the utility of science and technology in industry led to the establishment of mechanics' institutes, such as the Franklin Institute in Philadelphia in 1824 "whose main purpose was to bring the contents and methods of science directly to artisans and mechanics". Rudimentary instruction in science and mathematics enabled artisans and mechanics to inquire into the principles underlying their work. It is important to note that it was the educated class in urban areas that dominated innovation activities. The culture of science in American society facilitated the formation of social networks. There was the presence of "information hubs" or "educational networks" and "late eighteenth century

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[121] Robert Kargon and Scott Knowles, 'Knowledge for use: science, higher learning, and America's new industrial heartland, 1880-1915', *Annals of Science* 59 (1), January 2002, p. 19.
[122] Leonard Reich, *The Making of American Industrial Research: Science and Business at GE and Bell, 1876-1926*. Cambridge; New York: Cambridge University Press, 1985, pp. 14-16.

Connecticut's superbly educated, literate citizenry" who "possessed an exceptional capacity to acquire and process information" was an advantage that the locality had.[123] Citizens, especially those that were educated together, had supported the establishment of some 20 academies "offering more rigorous education than public schools" which became hubs of information exchange. The clergy served as repositories of information in rural areas. Their duties, such as "pulpit exchanges with other parishes, county ministerial association meetings, providing lodging for travelers, and local visits to wealthy farmers, professionals, and business people returning from trips gave them access to diverse information to share with parishioners."

Communication and information media also played a significant role in the transformation process. Farm magazines were a significant source of information about new technologies for Americans in the early industrialization period, especially commercial applications of agricultural science and technology.[124] But beyond that, Gerry Walter underscores the significant role of this medium of communication in the construction of an agrarian imagery as "models of responses to industrialization and technological change" in a way that promoted commercial values of production, efficiency and expansion, and marginalized "traditional conceptions of farming success." The agricultural press constructed an image of farmers, as William Conlogue puts it, "not apart from manufacturers, but as manufacturers".[125] Farming was to be "the most efficient, most profitable business in a new industrial order." The task of redefining the "imagined farmer" was undertaken and promoted by people removed from agriculture, such as professional experts, and the goal was to encourage farmers to produce more to feed workers in the industrial economy.

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[123] Meyer, *The Roots of American*, pp. 73-74.
[124] Gerry Walter, 'The ideology of success in major American farm magazines, 1934-1991', *Journalism and Mass Communication Quarterly* 73 (3), Fall 1996, p. 594.
[125] William Conlogue, *Working the Garden*. Chapel Hill, NC: University of North Carolina Press, 2002, pp. 15, 16.

4.3 The Japanese nationalist historic bloc and technological innovation

Carl Mosk points out that the critical political and social changes during the 17th century particularly the demilitarization of the countryside by the Tokugawa shogunate and the centralization of political authority laid the foundation of the extensive growth in Japan. [126] The relative peace made the country experience a massive expansion or commercialization of its agricultural economy, movement of peasant population into cities, and scope of markets. These processes occurred hand-in-hand with the growth in wealth and economic importance of the merchant class, the increased monetization of the economy, and the introduction of rural industries. Penelope Francks argues that the Japanese economic development experience "cannot be squared with standard models based on generalized Western experience of industrialization."[127] She points out Japanese rural households did not reflect the Western image of landless proletarians, persisting in their economic role as small landowners or tenants, "continuing as cultivators even as they also engaged in industrial work alongside farming." The highly specialized, large-scale, modern faming system observed in the West failed to materialize in Japan until the postwar period. Agrarian capitalism, through changes in factor endowments, technology, and growth in product demand, induced changes in property rights and contractual arrangements in Japan, thus promoting more efficient resource allocation through the market. Small-scale rural manufacturing, which characterized the development of many parts of Europe in the 18th and 19th centuries, was an important economic activity woven into the rural/urban circular and cumulative dynamics which provided the inertia and initial advantage that drive self-perpetuation.

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[126] Carl Mosk, *Japanese Industrial History: Technology, Urbanization and Economic Growth.* Armonk, NY: M.E. Sharpe, 2001, pp. 34-52.

[127] Penelope Francks, *Rural Economic Development in Japan: From the Nineteenth Century to the Pacific War*. Oxford and New York: Routledge, 2006, p. 2.

Yujiro Hayami and Masao Kikuchi point out that at the beginning of the feudal Tokugawa period (1603-1867) peasants' rights to farm had been limited to the right to till the soil with the obligation to pay a feudal land tax in kind. Later on, share tenure was replaced with lease tenure and at the end of the Tokugawa period, peasants' property rights were readily converted to the modern private property system in the succeeding Meiji period (1868-1911).[128] Moreover, because of the real danger of colonization by the Western powers, Japan embarked on a path to modern industrial development, cognizant that this process has both moral and material dimensions. Nonetheless, as Kaoru Sugihara suggests, there were positive linkages between the 'traditional' and the 'modern' industry and institutions. [129] Thus, for Sugihara "the boundary between imitation and innovation now seems blurred as ever." The importance of the institutions inherited from the Tokugawa period, such as "highly centralised bureaucracy and sophisticated commercial and credit networks which transferred new organizational patterns from one region to another and co-ordinated them nationally", cannot be overemphasized in accounting for

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[128] Yujiro Hayami and Masao Kikuchi, *Asian Village Economy at the Crossroads: An Economic Approach to Institutional Change*. Tokyo: University of Tokyo Press, 1981, p.28.

[129] Kaoru Sugihara, 'Agriculture and industrialization: the Japanese experience', in Peter Mathias and John Davis (eds.) *The Nature of Industrialization: Agriculture and Industrialization: From the Eighteenth Century to the Present Day, volume 4*. Oxford and Cambridge, MA: Blackwell Publishers, 1996, pp. 148-166.

Japan's rapid industrialization.[130] Although Western models were adopted, it was the existing institutional infrastructure which was "responsible for their rapid diffusion, as well as for the ways in which the original 'models' were modified." Sugihara notes that "the managerial capacity of the peasant household, the political and administrative skills of the village community, the paternalistic managerial structure of merchant houses and the *samurai* bureaucracy, both at the local and national levels, all played a part in this process."

The integration of technological innovation in national development was facilitated by the Meiji nationalist historic bloc. Modernization was promoted by Japanese intellectuals, foremost of whom was Yukichi Fukuzawa, who argued that modernization is driven by pure nationalist sentiment – "the spirit of civilization." In the face of an expanding predatory Western expansion characterized by social Darwinism, Fukuzawa encouraged Japanese society to assimilate the West's scientific culture. But this was undertaken against the backdrop of Japan's well-developed national culture, thus Fukuzawa was able to encourage the adoption of the material aspect of modernization without compromising cultural or moral dimensions. He was able to locate the Japanese nation in a totalizing global economy. His message to Japanese society was uncompromising, at a time when 'revolutionary' social change had to take place: "We must not import only the outward forms of civilization, but must first make **the spirit of civilisation** ours …The cornerstone of modern civilisation will be laid only when **national sentiment** has thus been revolutionised, and government institutions with it

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[130] Kaoru Sugihara, 'Review- Imitation and Innovation: The Transfer of Western Organizational Patterns to Meiji Japan', *Business History* 32 (2), April 1990, p. 289.

(emphasis added)."[131] In Meiji Japan nationalism was articulated in the context of *fukoku-kyōhei* (rich nation/strong army), *bummei* kaika (civilization and enlightenment), *shokusan kogyo* (encouragement of industries), and *oitsuke oikose* (catch up and pass).[132] Steeped with nationalist sentiment, the *samurai* modernizers set in train in 1868 Japan's modernization – its transformation into a new society with the inclusive membership of legally equal individuals across sectors of society, with a legal-rational political structure and impersonal government, in principle, and a robust economy. In less than twenty years (mid-1880s) Japan was "industrializing at a breathtaking pace, [and] was ready to take off."[133] Japanese intellectuals increasingly recognized that "mercantile and usury capital remained in the villages where they led a 'parasitic' existence on the serf system by lending to feudal lords"…[and] such capital could not accomplish the revolutionary transformation of Japan to capitalism on a national scale."[134] In 1886, Japan's foremost intellectual from the lower *samurai* class, Fukuzawa, in his newspaper *Jiji Shimpo* appealed to the Japanese society to "replace the old shopkeepers", referring to the merchants. Similarly, the periodical *Jitsugyo no Nihon* (Business Japan) in 1895 carried an article by Nishimura Shigeki which assailed the behaviour of the import-export merchants as selfish and immoral, conspiring with foreigners.[135] An editorial of the *Toyo Keizai Shimpo* (The Oriental Economist) on the same year stated:

> Examine the speech, appearance, attitudes, character, spirit, and habits of our merchants – all are shameful. They fight over trivial sums and short-range profits,

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[131] Alastair Bonnett, 'Occidentalism and plural modernities: or how Fukuzawa and Tagore invented the West', *Environment and Planning D: Society and Space* 23 (4), 2005, p. 512, citing Fukuzawa 1973 [1875], pp. 17-18.

[132] Germaine A. Hoston, *The State, Identity, and the National Question in China and Japan*. Princeton, NJ: Princeton University Press, 1994, p. 106; Liah Greenfeld, *The Spirit of Capitalism: Nationalism and Economic Growth*. Cambridge, MA and London, England: Harvard University Press, 2001, p. 327.

[133] Greenfeld, *The Spirit of Capitalism*, p. 227.

[134] Hoston, *The State, Identity*, p. 263.

[135] Greenfeld, *The Spirit of Capitalism*, p.337-338.

> and their only ambition is to feed themselves and their families. They know nothing of sovereign or country, nor are they concerned with the prosperity of the people or the good of society.[136]

The situation in Tokugawa Japan was quite different in the sense that land was owned by the domain lords, and merchants were not given the opportunity to own land. The *zaibatsu* ('political merchants', so-called because of their strong political connections), beginning with the Tokugawa shoguns (1603-1868) and later with the Meiji reformers (1868-1912), had few agrarian interests. They became Japan's industrial capitalists largely because Japan's modernizing bureaucrats had willed it to be so in the name of nationalism.[137]

Definite about their goal of making Japan rich and strong militarily to maintain their independence from the expanding Western powers in Asia, Japan's development strategy deployed by the *samurai* class was to ensure the dominance of industrial capital over merchants. Bai Gao argues that the Japanese "economics of industrialization" sees the establishment of national production (and innovation) system as the most important policy to establish a strong and globally competitive industry. This emphasis on production actually founded on the following solid principles of economic management: (1) building an optimal industrial structure (*sangyō kōzō*); (2) restraining excessive competition (*kado kyōsō*); and (3) trading companies' short-term profits for labor's cooperation in promoting productivity (*seisansei*).[138] Shortly after the Meiji Restoration, the Choshu *samurai*, Inoue Shozo, played an important role in the establishment of

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[136] Ibid.
[137] Mosk, *Japanese Industrial History*, pp. 181-197.
[138] Bai Gao, *Economic Ideology and Japanese Industrial Policy*. Cambridge, UK: Cambridge University Press, 1997, p. 14.

Japan's woolen industry. This initiative was inspired by Shozo's visit to Germany in 1870 to study military science. He wrote:

> I want to make our country the equal of Europe and America. Today even the small children of Japan talk of enriching the country and strengthening the military, and they call for civilization and enlightenment. But there are few men who really have attempted to discover the tree that has brought forth the fruit of civilization and enlightenment in Europe…After having read something of world history and geography in my search for the source of wealth, the military power, the civilization, and the enlightenment of present day Western nations, I realized that the source must lie in **technology, industry, commerce, and foreign trade. In order to apply these precepts and make the nation rich and strong, we must first of all instruct the people about industry.** Then we can manufacture a variety of goods and export them, import those articles we lack, and accumulate wealth from abroad (emphasis added).[139]

Keichi Oshima argues that from the beginning of Japan's industrial development, the Meiji government pursued technological innovation as an integrated process, "including important facets such as education, technology transfer, indigenous research, development, commercialization, and diffusion of technology and products."[140] The integrated approach was a natural consequence of a catching-up strategy. Consequently, policy for promotion of modern industry was closely integrated with the government policies and measures in engineering education at the universities, introduction of Western science and technology, training of skilled labour, infrastructure development, and the development of agriculture. The role of the *samurai* bureaucrats was central, given that they were responsible for integrating all relevant actors in the transformation process. Nevertheless, a survey of the major developments in Japanese technology and industrial policy undertaken by Tessa Morris-Suzuki shows that Japan's rapid technological change was not the sole handiwork of far-sighted government bureaucrats or the innovative capabilities of large companies.[141] Social networks of information were crucial in conveying new ideas quickly from large corporations to small traditional workshops and factories often in remote parts of the country, and this was made possible because of the nature of social institutions which had begun to develop before the opening of Japan to the west and which were maintained after contact.

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[139] Inoue quoted in Byron K. Marshall, *Capitalism and Nationalism in Prewar Japan: The Ideology of the Business Elite, 1868-1941*. Stanford: Stanford University Press, 1967, pp. 15-16; also quoted in Greenfeld, *The Spirit of Capitalism*, p. 328.

[140] Keichi Oshima, 'Technological innovation and industrial research in Japan', *Research Policy* 13 (5), October 1984, p. 285, 286, 287; See also Yujiro Hayami and Vernon Ruttan, *Agricultural Development: An International Perspective*. Baltimore and London: The John Hopkins University Press, 1985, pp. 231-240.

Technology and innovation were considered to be of extreme importance in Japan's industrial policy with maintenance of a reasonable national standard of living for the Japanese people a national goal. And these production capabilities "must be built up by purposeful effort." Unlike cheap labor and raw materials which are natural endowments, there is nothing natural about production technology capabilities. The tacit nature of technology requires a network of institutions to support the development of technologies and their commercialization. Yujiro Hayami and Vernon Ruttan point out that "Western technology and industrial productivity was regarded as of utmost urgency", and emulating Germany, "progress in education, science, and technology was viewed as "an effective instrument of national progress." Astute study of Western development by the Meiji reformers led them to the conclusion that "productivity growth in agriculture, the dominant sector of the economy, not only was required to contribute to social welfare by increasing the consumers' surplus but also was essential to finance industrialization and various modernization measures." Consequently, the first objective was to develop the agriculture sector through the use of farm machinery and implements and machinery for agriculture-based industry, especially textile and silk clothing manufacture. Quickly recognizing that farming technology had to be compatible with the factor endowments of the Japanese economy, the Meiji government refocused the strategy from "direct transplanting of Western technology" into diffusing indigenous agricultural technologies and innovative best practices.[142] In the 1880s, the newly created Ministry of Agriculture and Commerce (1881) "established an itinerant instructor system... in which the instructors traveled throughout the country holding agricultural extension meetings to spread "best practical farming experience" and "new scientific knowledge", such as "best seed varieties already in use by Japanese farmers" and "the most productive cultural practices used in the production of Japan's traditional staple crops, rice and barley." Farmers formed agricultural societies called *nodankai* (agricultural discussion society) and *hinshukokankai* (seed exchange society) and rice production practices discovered by farmers, such as use of salt water in seed selection, improved preparation and management of nursery beds, and check row planting were disseminated by the itinerant instructors and sometimes enforced by the police. Experimental stations established were responsible for the further development of techniques with the motivation of increased productivity. "Effective interaction between farmers and scientists was deliberately encouraged as part of the process of screening, adapting, and diffusing the best indigenous technology".

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[141] Tessa Morris-Suzuki, *The Technological Transformation of Japan: From the Seventeenth to the Twenty-first Century*. Cambridge; New York: Cambridge University Press, 1994.

Francks points out that traditional industry which utilized agriculture raw materials, such as food processing (particularly soy sauce brewing, bean paste and sake) and textile manufacturing (e.g. silk reeling, cotton weaving and indigo production) constituted a large proportion of the Meiji economy, providing employment and income and contributing to overall industrial growth.[143] Cotton textile manufacturing, which developed into a modern industrial sector, along with hand-loom weaving, helped the growth of the small machinery sector. Raw silk became Japan's major export commodity to the US and Europe prior to World War II. Sugihara points out that the Meiji government provided exporters with credit facilities and protected them from foreign competition as the treaty post system prevented foreign merchants from penetrating the Japanese domestic distribution system. The government built model factories in the early 1870s and introduced simplified spinning and reeling machines. Wholesalers and merchants often became the source of capital for small-scale producers or manufacturers. The silk industry provided employment for many rural women and silkworm production involved 880,000 farm households. The government established commercial and technical schools and industrial experimental and testing stations. The Ministry of Foreign Affairs and Ministry of Agriculture and Commerce also provided commercial information and improved standardization techniques. However, Morris-Suzuki argues that "the initiative for technological change did not all come from the top" because the private sector was immensely engaged through a "complex layer of intermediate social institutions, such as local government and trade associations.[144]

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[142] Hayami and Ruttan, *Agricultural Development*, pp. 232-235.

When Japan surrendered to the Allies in 1945, the Prime Minister called on the Japanese people to protect and develop the existence of the Japanese nation, encouraging everyone to "cultivate a new life spirit of self-reliance, creativity and diligence in order to begin the building of a new Japan, and in particular should strive for the progress of science and technology." Recognizing science and technology as the nation's greatest weakness in the war, a 'vision of technology' became the basis of the new Japan.[145] Japan's postwar industrial policy was implemented by MITI (Ministry of International Trade and Industry). Gao notes that guided by what is called *jissenha-ha* economics" (or the economics of actual fighting), postwar Japan rebuilt its economy and pushed the country into an unprecedentedly rapid economic growth and development. This philosophy which emphasizes dynamic comparative advantage based on production technology improvement had its roots in the Meiji period (1868-1912). The Meiji reformation was one of the most remarkable epochs of change in Japan. The so-called 'unequal treaties' between Japan and the Treaty Powers of Europe and the US and the subsequent failed effort of the Iwakura Mission to change the provision of the treaties in 1871 convinced the Japanese leaders that before Japan could attain equality with the West, it had to modernize through industrialization. The Japanese ruling elites' response to Western challenge was nationalism-expansionism.[146]

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[143] Francks, *Rural Economic Development,* p. 84.
[144] Morris-Suzuki, *The Technological Transformation,* p. 96.

The project to develop technology, innovation and industrial system was not the sole responsibility of government, but also included Japanese intellectuals. Gao argues that contrary to "the conventional belief that Japanese industrial policy had little intellectual foundation …the Japanese state has had a close tie with academic, incorporating various economic ideas into policymaking." Foremost of these was the Meiji economist Hiromi Arisawa (1896-1988) of the University of Tokyo whose ideas of "managed economy" underpinned Japan's development strategy at a time when effectiveness in allocating limited resources at the macro level was crucially important given that the nation was confronted with a series of crises. Arisawa, together with Ichirō

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[145] NKGST, vol. 5, p. 44, cited in Morris-Suzuki, *The Technological Transformation*, p.161.
[146] William Beasley, *The Rise of Modern Japan: Political, Economic and Social Change Since 1850*, Revised Edition. London: Weidenfeld and Nicolson, 2000, pp. 21-37.

Nakayama (1889-1980) and Siichi Tōbata (1899-1983) were leading figures in Japanese history. They belong to the *gosanke*, the three branch families of the Tokugawa house who were supporters of the central *bakufu* government. They were three of the most prominent advisors to the Japanese government on economic policies, serving in multiple positions as heads of important advisory committees.[147] An economist and an admirer of Francis Bacon, Arisawa distinguished himself from wither the *marukei* (Marxist economics) or *kinkei* (modern economics) school by "being able to adjust his views easily" to "fit Japanese reality". As president of the Academy of Japan, Arisawa led the designing of Japan's priority production program which identified coal, iron, and steel to constitute "the foundation of modern industry." At this point, Gao argues, the Japanese state had strengthened its "capacity in integrating policy within the bureaucracy" as an "efficient countermeasure to the sectionalism within the state bureaucracies." The *gosanke* economists provided the intellectual leadership or vision for Japan's national development. Their nationalist vision imparted the intellectual universe of assumptions, values, and expectations that to a great extent defined the parameters and often the direction of thinking of Japan's politicians, businessmen, and the general public, in terms of their perception and understanding of the economy. Their perceptions of the economy, in turn, became the basis on which the political and economic actors formed their expectations. The 'economics of fighting' was designed in response to, or as a countermovement to what these intellectuals perceived and understood as a very hostile world order from the late 19th century to the 20th century.[148] With a world order defined by social Darwinism, these politically astute ideologues rallied Japanese society to think that the survival of their country required 'actual fighting'. Within the context of a highly competitive global economy, competitiveness and efficiency became the top political issue. These academic elites borrowed selectively from Marx's concept of 'forces of production', Schumpeter's idea of 'innovation', and Keynes' 'demand management', and adjusted them to Japanese local conditions. They had close connections with Japan's top political officials and played a prominent role in state policymaking.

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[147] Bai Gao, 'Arisawa Hiromi and his theory for a managed economy', *Journal of Japanese Studies* 20 (1), Winter 1994, pp. 115, 123, 124, 125.
[148] Gao, *Economic Ideology*, p. 21.

4.4 Summary

This chapter continues to trace the roots of the lack of interest on the part of Filipino political leaders in building up the country's technological capabilities. The analysis shows that this 'lack of political will' was deeply rooted and intertwined in the Philippines' colonial history. While the US occupation, punctuated by a brief Japanese regime, was certainly shorter than the three-century rule of Spain, its strategy of 'benevolent assimilation' was most effective in 'un-forming' and 'de-forming' the newly-born Filipino nation. The colonial government co-opted the cosmopolitan local élite through its incorporation in the American-Filipino political structure. Such an edifice thwarted the much-desired freedom of the Filipinos, and served as a monument to the betrayal of the local élite of the sacrifices of the hundreds of thousands of Filipinos who laid down their lives during the two wars fought against the colonial oppressors. The American-Filipino political structure further entrenched mercantile and financial interests (American-Chinese-Filipino) in the Philippines by continuing the free trade regime which began during the Spanish period.

Economic liberalism was strengthened through the Bell Trade Act which ensured that the economic umbilical cord remained, connecting the 'independent' Philippines to its post-colonial master. The result was the continuation of a 'primitive accumulation' that relied on agrarian and commercial sectors as the major sources of income and employment. Moreover, agrarian capitalism, which is crucial in creating conditions for industrial development, did not emerge because of increased land concentration, instead of land distribution. In sum, the Philippine political economy was never modernized under the Americans and the Japanese. Consequently, no developmental project was being 'imagined' by the cosmopolitan Filipino élite as a rallying point for the local people. There was no compelling desire to use technology to build highly productive agriculture and industry sectors, a key aspect of a dynamic modern economy. The fundamental belief in economic liberalism that industrial development as an economic process occurs 'naturally' as a consequence of the workings of the 'invisible hand' of market forces, rather than the government's active encouragement through incentives or policies, was most enduring. Undoubtedly this is the biggest hurdle the Philippines must overcome if it is to modernize its economy.

America's benevolent assimilation was simply political rhetoric. The belief that white race is a superior race and that the 'fits' deserve to rule the 'unfits' prevented the American colonial government from assimilating the brown Orientals "akin to the Negro in moral and intellectual development", and who "deserve to live on a level with Oriental standards, according to the Oriental manner and Oriental customs, enjoying the ordinary fruits of other Oriental people". In the meantime, the postcolonial Philippines bears the onus of generating that social formation. I suggest that such a daunting task must be carried out by an alliance of political, economic, technological, and intellectual forces glued together by a nationalist desire to create a progressive Philippines that will benefit a majority of the Filipinos. This configuration of forces and the synergism produced by their actions have been shown to successfully transform the trade/finance-based economy into an industrial one, as illustrated by the 18th- and 19th-century US and 19th-century Japan experiences.

Chapter 5 The failed attempt, 1946-1980s

> Between each individual and entire humanity, however, stands THE NATION, with its special language and literature, with its peculiar origin and history, with its special manners and customs, laws and institutions, with the claims of all these for existence, independence, perfection, and continuance for the future, and with its separate territory; a society which, united by a thousand ties of mind and of interests, combines itself into one independent whole, which recognises the law of right for within itself, and in its united character is still opposed to other societies of a similar kind in their national liberty, and consequently can only under the existing conditions of the world maintain self-existence and independence by its own power and resources. As the individual chiefly obtains by means of the nation and in the nation mental culture, power of production, security, and prosperity, so is the civilisation of the human race only conceivable and possible by means of the civilisation and development of the individual nations.
>
> ***Friedrich List (1885)***

> A nationalist economic programme could mean only one thing – industrialization. The economic opportunities created by such a programme would be tremendous, and a nationalist administration supported by a nationalistic citizenry would make sure that the fruits of economic progress would be harvested primarily by Filipinos.
>
> ***Renato Constantino (1978)***

A highly productive economy has business enterprises that are not only efficient producers of goods and services, but are also innovative and capable of introducing to the world market new products at premium prices. Nations with more of these types of firms are wealthy – rich countries spawn rich companies. As Ernest Hemingway said, "the difference between rich nations and poor nations is not that the rich have more money than the poor, but that rich nations produce more goods and services…because their technology is better."[1] Dynamic and competitive enterprises are not a given; they are nurtured by a favourable social environment created by a proactive modernizing historic bloc, something that the Philippines lacks.

In this chapter, my task is to unravel the factor(s) that largely contributed to the failed first attempt of postcolonial Philippines to establish a robust and competitive local industry. My thesis is that economic development strategy solely based on trade policy was not enough. Despite the internal coherence of the IS (Import Substitution) historic bloc, the absence of an industrial policy that combines trade with technology and innovation policies demonstrates the bureaucracy's lack of capacity to intervene effectively. Trade policy as the instrument for development was so entrenched even in the mindset of nationalist development planners, that a NSI was difficult to establish. Sub-section 5.1 argues that a nationalist historic bloc was formed during the IS period (1949-1962), and the sentiment to create a strong and economically independent Philippines motivated a nationalist politico-ethical élite to transform the mercantile economy into an industrial one. However, postcolonial political economic structures and a nationalist strategy which neglected agriculture and did not make technological innovation central in industry development were a recipe for failure. There was no effective industrialization strategy put in place during the IS period because such a strategy does not rely on trade policies alone. Pressures for postwar recovery and postcolonial structures, such as the Bell Trade Act and loan conditions imposed by the WB-IMF (World Bank –International Monetary Fund), limited the options of national leaders. Worthy of note, though, was the fact that the most traditional and even vilified landed oligarchy and traders demonstrated that they were capable of adjusting to the state's policy choices. It is the powerful state bureaucracy, then, that owes an explanation to the Filipino people why the Philippines remains Asia's laggard. In this account, I show that because of the absence of government policies, lack of direction and strategies to build the production sector, businessmen resorted to cronyism to survive. Sub-section 5.2 makes the above arguments more salient when Taiwan's successful industrialization strategy is examined. Sub-section 5.3 summarizes the analysis.

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[1] Hemingway as quoted in Joel Mokyr, *The Lever of Riches: Technological Creativity and Economic Progress*. New York: Oxford University Press, 1990, p. vii.

5.1 Why the Philippines' IS strategy failed

The postcolonial economic development strategy was fundamentally the same as it was during the Spanish, American, and Japanese (brief) periods – a free trade or export-led without a robust local industry. From 1946 until 1957, the country was governed by cosmopolitan *ilustrados* who unambiguously continued the colonial policy of "free enterprise economy on the basis of private initiative".[2] The goal, as Frank Golay says, was that a significant number of individuals "motivated to produce rather than consume…must emerge". But to create a production-oriented economy requires a developmental historic bloc. A laissez faire postcolonial Philippines was inconsistent with the desired goal of economic development in a country trying to catch-up (Chapter 1). What is ironic is that nationalism and the establishment of a 'strong' state were the two political 'innovations' contained in the Philippine Constitution of 1935.[3] The

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[2] Frank H. Golay, *The Philippines: Public Policy and National Economic Development*. Ithaca, NY: Cornell University Press, 1961, pp. 4, 5, 9.

[3] Emmanuel S. de Dios, 'Nationalism and the strong state in the 1935 Philippine constitution', *Philippine Review of Economics* 39 (1), June 2002, p.1.

Constitution endowed the executive branch of government with "extraordinary coercive powers and fiscal prerogatives."[4] Although the political system was organized similar to that of the US with the executive, legislative, and judiciary branches exercising powers for checks and balances, Eva-Lotta Hedman and John Sidel argue that "the Philippine President was deliberately given a position of predominance." [5] One would have expected, therefore, a developmental state in postcolonial Philippines, similar to Japan or South Korea and Taiwan. Why then was a 'strong state' rendered incapable of sustained rapid industrial development in the early postwar period?

Studies in the 1960s and 1970s characterize the Philippines as a 'patrimonial oligarchic state', and identify this as the main obstacle to development because it encouraged what Paul Hutchcroft calls "booty capitalism" (i.e., the plunder of state resources by social forces with a firm economic base outside of a largely incoherent state) in key sectors of the economy, such as banking[6] and manufacturing.[7] In effect, the state was 'weak', unable to resist the particularistic interest of economic society. Sidel rejects the idea of a weak state, arguing that the Philippines' political apparatus displays enormous power, rather than weakness, which shapes public policies as much as the oligarchs and cronies.[8] He writes: "...the notion that patron-client relations ever provided the essential social cement in Philippine life ignores the persistence of coercive pressures and local power monopolies in electoral politics and social relations."[9] In fact, Sidel asserts, 'electoral fraud' , 'vote buying', and 'violence' were much in evidence in pre-martial-law and even prewar years when "legislators and local officials (and their families) entrenched themselves in various municipalities, districts, and provinces throughout the twentieth century." However, Sidel points out that the features of a social formation found in postwar Philippines as far as "bossism"[10] is concerned were similar to those in developed countries. This is supported by the works of scholars such as Martin Shefter and Steven Erie which, as Sidel points out, underscore the emergence of urban political machines in developed countries. Political machines in developed countries share similarities with those in developing countries in the sense that they are "primarily élite – rather than mass-created", and local bosses "rely on 'intergovernmental alliances' with patrons at county, state, and national levels to monopolize all public sector resources in the metropolis to strengthen their organizations and starve their opponents."[11]

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[4] Eva-Lotta E. Hedman and John Sidel, *Philippine Politics and Society in the Twentieth Century: Colonial Legacies, Post-Colonial Trajectories*. Florence, KY: Routledge, 2000, p. 16.
[5] Ibid.
[6] Paul D. Hutchcroft, *Booty Capitalism: The Politics of Banking in the Philippines*. Ithaca, NY: Cornell University Press, 1998.
[7] Temario Rivera, 'Class, the state and foreign capital: the politics of Philippine industrialization', PhD Dissertation. University of Wisconsin-Madison, 1991.
[8] John T. Sidel, *Capital, Coercion, and* Crime: *Bossism and State Formation in the Philippines*. Stanford, CA: Stanford University Press, 1999, pp. 3-4.

Coercion has always been a feature of the state, traditional or modern.[12] The mere use of coercive power does not differentiate between a modern and traditional state. What distinguishes is the sphere where such power is predominantly used. In traditional states, like the Philippines, authoritative (or political) and allocative (or economic) powers of the ruling élite are fused, but such powers are utilized to extract surplus using state offices. In modern social formations, by comparison, the bureaucracy is not only autonomous from the economy, but the extraction of surplus is largely located in the economy. Thus, modernizing economic bureaucrats, such as those of late 19th-century Japan, for example, were able to define Japan's industrial development as **the** national interest and "set out quite self-consciously and intentionally, to *create* a comparative advantage in industrial production in defiance of Western economic 'laws' and orthodoxy."[13] The key to Japan's developmental state was the nationalist **modernizing** bureaucratic élite. Japanese politicians were "preoccupied with politicking and raising money" so that they were "content to leave the management of the economy to the technocrats." The *samurai* technocrats, in turn, used their 'autonomy' and vast powers to plan and guide the course of economic development rather than wait for the market to determine the most efficient allocation of available economic resources to ensure the transformation of the Japanese economy from mercantile into industrialized.[14] Daniel Okimoto argues that it was the Japanese bureaucrats' ability to "custom design policy instruments to fit the differing priorities, needs, circumstances of individual industries" that was central to their "industry policies".[15]

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[9] Ibid., p. 9.

[10] The term 'bosses' refer to "predatory power brokers who achieve monopolistic control over both coercive and economic resources within given territorial jurisdictions or bailiwicks" (Sidel 1999, p. 19). James Scott wrote: 'Boss' is a designation at once vague and richly connotative. Although a boss may often function as a patron, the term itself implies (a) that he is the most powerful man in the arena and (b) that his power rests more on the inducements and sanctions at his disposal than on affection or status. As distinct from a patron who may not be supreme local leader and whose leadership rests at least partly on rank and affection, the boss is a secular leader par excellence who depends almost entirely on palpable inducements and threats to move people." See James Scott, 'Patron-client politics and political change in Southeast Asia', *The American Political Science Review* 66 (1), 1972, p. 96.

[11] Ibid. p. 5.

[12] Max Weber, *The Theory of Social and Economic Organization*. New York: Free Press, 1947, p. 154.

Unlike the *samurai* bureaucrats, the Filipino *ilustrados* were cosmopolitan rather than nationalist, and were part of a neo-colonial transnational politico-ethical structure. This severely limited their capacity to carry out a nationalist project. Like the *samurai* bureaucrats who were vested with "extraordinary power and authority"[16], the Filipino bureaucratic élite were imbued with enormous "legal and constitutional prerogatives" and "administrative control" as laid down in the Philippine Constitution. They were accorded avenues for executive initiative as Filipino politicians were highly dependent upon key government agencies for all economic legislation. Congress had "a tradition of making broad grants of authority over economic policy to executive agencies."[17] Economic development planning in the Philippines then was the technocrats' call, not unlike in Japan. But why did the *samurai* 'get it right' and the *ilustrados* 'get it wrong'?

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[13] Mark Beeson, *Regionalism and Globalization in East Asia: Politics, Security and Economic Development*. Basingstoke [England]; New York: Palgrave Macmillan, 2007, p. 147.
[14] Ibid., 147, 149, 150.
[15] Daniel Okimoto, *Between MITI and the Market: Japanese Industrial Policy for Industrial Policy*. Stanford, CA: Stanford University Press, 1989, p. 9.
[16] Beeson, *Regionalism and Globalization*, p. 150.

The same vast powers accorded to the executive government in the 1935 Constitution did not produce a modern economy in the Philippines, but preserved the status quo, because the bureaucrats did not have a nationalist sentiment – that vital link to the Filipino masses to move them to devise strategy that would uplift their poor majority countrymen. As nationalism is closely associated with developmentalism and 'scientism' (Chapter 2), it was not surprising that the inherited dual economy wherein a relatively modern commerce-oriented sector grew alongside a traditional, technologically backward, subsistence agricultural sector was left untransformed by the cosmopolitan *ilustrados*. What is more – these sectors were not only economically isolated, but the ownership of the modern [commercial] sector tended to be vested in the economically rational Chinese minority as well as in the dominant Western minority. As might be expected, it was business as usual in postcolonial Philippines because the cosmopolitan political élite, Golay argues, had strong motivation "to maintain the economic and political *status quo*."[18] For them a developmental state characterized by government activism means a "redistribution of income at their expense" and a "change in the economic organization of agriculture" through land reform. They didn't want these changes. Moreover, as they were engaged in the exportation of agricultural crops, a free trade and minimum-government policy regime was to their benefit because it promoted an "uneasy equilibrium of suspicious, competing racial and economic interest groups." A fragmented Filipino society with lines drawn not only based on class, but also on ethnic and racial groupings was a clear demonstration of how effectively, in the words of Floro Quibuyen, the Filipino nation was "aborted" by American colonialism.[19] A non-intervening government was also of interest to the minority Chinese and western business élite. They knew, Golay notes, that "the burden of direct taxation falls disproportionately on them", and because they would have "limited participation in the welfare benefits, they tended to resist expansion in governmental functions and services." This group then was "politically active in the battle to limit nationalist encroachments on their entrepreneurial freedom." The most influential in government policy, of course, was the American business community. Its power derived from the substantial US economic and security concessions to the Philippines: (1) a sugar quota which allocated to Filipino sugar producers a guaranteed annual sugar market in the US for almost one million tons at exorbitant prices; (2) US military aid which not only contributed substantial foreign exchange earnings but, more importantly, provided "the Philippines with a relatively cheap guarantee of continued national existence"; and (3) US economic aid.[20] These US concessions benefited other Western businesses, such as British, Danish, and Swiss firms which had been "sheltered by the militancy of the US Embassy in serving American economic interests." The Spanish business community, of course, enjoyed a "unique social position of high status" with the Sorianos, Elizaldes, Ayala-Zobel, Aboitez and Ossorio families as the most prominent. The Chinese continued to dominate retail trade, financing, and marketing of small-holders' crops, particularly rice and coconuts.

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[17] Golay, *The Philippines*, pp. 18-20.
[18] Ibid., pp. 24-25.

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[19] Floro C. Quibuyen, *A Nation Aborted: Rizal, American Hegemony, and Philippine Nationalism*. Quezon City: Ateneo de Manila University Press, 1999.
[20] Golay, *The Philippines*, p. 26.

The country was in a deep crisis in 1949 which led to the triumph of economic nationalism in the 1950s. Industrial development was pursued by the government through IS strategy, but it failed to achieve its goals. An industrialized Philippines has remained elusive until today. Explaining the failed industrialization attempt became the pre-occupation of Filipino and foreign economists alike. Mainstream economists, of course, aimed their guns at the usual suspect – protectionist policies.[21] "If industrialization has faltered", they say, "it is not, we believe, because of obstacles inherent in the institutional, political, or ideological setting. It is rather because of mistaken policies."[22] But isn't it that ideologies provide the frame by which we analyze or diagnose problems and prescribe cures? The statement that the obstacles to Philippine industrial development were not "inherent in the institutional, political or ideological setting" was, in fact, **the biggest** problem, especially when such a statement came from those who had tremendous sway in Philippine policy decision- making. Almost tautologically, the economic nationalism of the IS period has been blamed for its failure. Mainstream economists argue that the import and exchange control system initiated at the end of 1949 in response to a balance-of-payments crisis was the culprit. In addition to the exchange control system, industries classified as 'new and necessary' were exempted from all taxation for a limited number of years and were guaranteed exchange allocations for imports of raw materials.[23] Among other things, that strategy resulted in an acute shortage of foreign exchange in the 1950s, inefficient Filipino firms were relegated to assembly and packaging operations in the international division of labor, and the backward linkages which could have set up the next stage of industrial growth were obstructed.[24] But the core of this crisis, Golay argues, was "the growing frustration of the middle and lower classes…of the body politic." The Filipino élite did not only tend "to spend more abroad than could be sustained by foreign exchange earnings" but were also "incapable of action in the interests of all the Filipinos."[25] Moreover, regionalism based on ethnic and language divisions undermined the development of social cohesion.

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[21] Romeo Bautista, Helen Hughes, David Lim, David Morawitz and Francisco E. Thoumi, *Capital utilization in manufacturing: Colombia, Israel, Malaysia and the Philippines*. New York; Toronto: Oxford University Press, 1981; Romeo Bautista and Gwendolyn Tecson, 'International Dimensions', in Arsenio Balisacan and Hal Hill (eds.), *The Philippine Economy: Development, Policies, and Challenges*. New York: Oxford University Press, 2003, pp.136-171; Leonardo A. Lanzona, 'Jobless growth, trade and globalization', Yellow Paper II, Beyond EDSA: the post-Erap Reform Agenda', n.d. http://www.aer.ph/projects/yellow2/, 13 pp.

[22] John H. Power and Gerardo P. Sicat, *The Philippines: Industrialization and Trade Policies*. London; New York; Kuala Lumpur: Oxford University Press, 1971, p. 78.

I suggest three major reasons why the national government was unable to modernize the economy during the IS period: (1) the interlocking postcolonial political, economic and cultural structures which limited the options of national agents, (2) the failure among nationalist bureaucrats to combine trade policy with strategies to acquire, learn, and build technological innovation capability at the firm level; and (3) the neglect of the agriculture sector. In 1949 the Philippines was in a severe balance of payments crisis. A bifurcated agriculture sector, a free trade regime, a country recovering from postwar devastation, and corruption, all combined, constituted a recipe for economic disaster.[26] The agricultural economy was composed of two distinct sectors: one is a subsistence, backward and capital-starved small-holders' cultivation and the other an enclave modern plantation crop sector. Free trade and the resistance of landed politicians to increased land taxes resulted in failure of government to raise sufficient revenues, hence the successive budgetary crises. Demand for imports of manufactures, fuels, and foodstuffs increased enormously, creating pressure on available foreign exchange resources. The Bell Mission (not to be confused with the Bell Act) was sent by the US government to the Philippines to assess the situation. The Mission's diagnosis of what fundamentally ailed the Philippine economy was very revealing. The Report states:

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[23] See, For example, Power and Sicat, *The Philippines*, p. 18; Golay, *The Philippines*, p. 29.
[24] Backward integration is when a company expands its business into areas that are at different points on the same production path. For example, an electronic firm establishes a wafer plant in order to reduce the risk associated with purchasing microchips or to increase value-addition.
[25] Golay, *The Philippines*, p. 72.
[26] Ibid., p. 47.

> The failure to expand production and to increase productive efficiency is particularly disappointing because investment was exceptionally high and foreign exchange receipts exceptionally large during most of the post-liberation period. Too much of the investment went into **commerce and real estate** instead of the development of **agriculture and industry**; investment undertaken by Government corporations has unfortunately been ineffective. A considerable part of the large foreign exchange receipts were dissipated in **imports of luxury and non-essential goods**, in the remittance of high profits, and in the transfer of Philippine capital abroad. The opportunity to increase productive efficiency and to raise the standard of living in the Philippines in the post-war period has been thus wasted because of misdirected investment and excessive imports for consumption (emphasis added).[27]

The finding that postcolonial Philippines was a consumer rather than a producer economy was nothing new. The Mission was absolutely correct that the focus on commerce and the lack of productive efficiency were behind the economic problems of the country. However, it was short in its recommendations how to improve productive efficiency. Consistent with the usual liberal prescription focus on 'good governance', the Bell Report recommended tax increases, controls on transactions in foreign currencies, a minimum wage law, various administrative improvements and land reform. These reforms were recommended in exchange for the US$250 million in American aid. As expected, apart from land reform, the recommendations did not really point to the root of the problem – the lack of nationalist leadership with a vision to create a political and social environment favourable to the development of a robust production sector, driven by technological innovation, which encourages social mobility, especially for the majority poor Filipinos in the farming sector. That was expected; after all, the US was the architect of Filipino nationalism's decimation. The underdevelopment of agriculture was connected to the failure of the US to impose radical change in land ownership and to introduce rural productivity-enhancing programs.[28] This is often cited as the major factor differentiating economic performance and extreme social inequality in the Philippines compared to South Korea and Taiwan. Land reform distributes income and assets more equitably among rural people, and abolishes a class structure based on landholding status.[29] The postwar authoritarian governments of Japan, South Korea, and Taiwan implemented complete agrarian reforms imposed upon them by the US. Why did the US fail to do the same in the Philippines? Steven Dale MacIsaac points out that the power of opposing transnational coalitions of social forces over US economic policy in the Philippines varied over time, depending on the changes in the larger global political structure and the relative significance of the Philippines to that structure.[30] It is important to note that after the Second World War there was a growing tension between the US and Soviet Union in the Cold War that largely caused the shift of America's Asian security strategy away from its former colony and ally towards Japan. In an effort to contain the spread of communism in the Asian continent, the US State Department and the US Joint Chiefs of Staff (JCS) policies emphasized the American government's determination to make Japan a "full-fledged member of the Western bloc, both politically and economically."[31] Consequently, high on the US State Department and the US JCS agenda for Japan was the latter's economic reconstruction and recovery from 1947 onwards, and the establishment of a major American military base in Okinawa. America's policy on Japan had substantially changed, from it being a 'threat' to becoming a 'major ally' in the Pacific Rim, at the expense of the Philippines. Similarly, South Korea faced a significant communist threat from its north and Taiwan from mainland China. MacIsaac argues that when the importance of the Philippines to America's broader security strategy in Asia waned after World War II, this allowed American expansionists whose interests in the Philippines remained fixed "to dominate the policy process for several years ... and strengthened [their] grip ... over ... the Philippines where the United States had the

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[27] The US Economic Survey Mission to the Philippines, *The Bell Report.* Manila: Philippine Book, 1950, p.3

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[28] The Philippines has a long history of experimentation with land reform which culminated in the Land Reform Act of 1955, but not much success has been achieved because the landed oligarchs who were in government positions derailed any radical change. The policy of purchase of large landed estates and resale to cultivators was started by Gov. Taft who arranged for the purchase of the so-called "friar lands" from the Roman Catholic Church in 1904. After the establishment of the Commonwealth in 1935 this policy was revived as a major part of Pres. Quezon's "Social Justice" program as a response to agrarian dissidence which occurred frequently in the 1930s. Commonwealth Act No. 21 of July 11, 1936 authorized the President to purchase, either by negotiation or through expropriation proceedings, homesites on large landed estates for resale to occupants and appropriated Php 1 million for this purpose. In 1939, the RPA (Rural Progress Administration) was established and in 1950 it acquired 37,747 hectares, approximately 2 percent of the area of tenant-operated farms in 1948. Land acquisitions by the RPA depended on loans by the government-owned Philippine National Bank (PNB) and the Rehabilitation Finance Corporation (RFC). It was expected that a revolving fund could be created from the payments of new owner-cultivators to continue with land distribution. During the postwar period, collections were not enough to support the operating expenses and RPA capital assets were drained. Land reform became dormant as Congress refused to appropriate funds for the purpose of distributing lands (Golay, *The Philippines*, p. 273-274).

[29] See, for example, Howard Handelman, *The Challenge of Third World Development*. Upper Saddle River, NJ: Prentice Hall, 2003, pp. 146-169; Toshihiko Kawagoe, 'Agricultural land reform in postwar Japan: experiences and issues', Policy Research Working Paper 2111, World Bank, May 1999, pp. 35-36. Change in the tenure-ownership rights of the cultivators in the land-capital factor would have facilitated stronger claim by the cultivator of farm products and improvements in productivity.

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[30] Steven Dale MacIsaac, 'Nationalists, Expansionists and Internationalists: American Interests and the Struggle for National Economic Development in the Philippines, 1937-1950', PhD Dissertation. University of Washington, 1993.

[31] Yuko Ito, 'Postwar US military policy toward the Philippines and the 'Japanese factor', 1945-1951', in Setsuho Ikehata and Lydia N. Yu Jose (eds.) *Philippines-Japan Relations*. Quezon City: Ateneo de Manila University, 2003, p. 301.

greatest influence before the war." He suggests that unlike in the Philippines, the absence of this "expansionist influence" in Japan, South Korea, and Taiwan prior to World War II combined with the greater importance of these countries to American communist containment policy in Asia provided greater leverage for these Northeast Asian countries' rapid development."[32] Perhaps MacIsaac has raised an important point here. To put it in another way, the dominance of postwar nationalist leadership in South Korea marginalized global forces or as MacIsaac calls them, 'expansionist influence'. What is clear in the above account is that the colonial legacy of global structure in the Philippines, present for many centuries, is now rearing its head in Korea in the name of globalization. The opposite has been the long struggle in the Philippines – how to disempower this transnational force. It happened once in the history of the Philippines. The economic crisis in 1949 provided an opportunity for developmental thinking to gain power. With economic nationalism as the framework, Filipino nationalists embarked on an industrial development trajectory through import substitution. Nationalist intellectuals such as Salvador Araneta, Hilarion Henares, Jr., and Alejandro Lichauco found allies in 'political icons' like Claro M. Recto, Jose P. Laurel, Lorenzo M. Tañada, and Jose W. Diokno. Araneta succeeded in having his ideas adopted by the Filipino political leaders of the time.[33] The focus of industrial development was on heavy industries, such as steel manufacturing to the extent that there was an "anti-agriculture bias", especially given that this sector was associated with the most conservative segment of Philippine society, the big-landlord class, particularly the sugar-bloc.[34] I argue, however, that such a strategy was flawed, as shown by the experiences of Britain (Chapter 3), the US and Japan (Chapter 4), Taiwan (as discussed below) and South Korea (Chapter 6) wherein agrarian capitalism or rural development generated synergy with industrial urban. Small-holder agriculture in the Philippines dominated the production of some export crops, such as coconut, abaca, and a number of minor crops such as rubber.[35] This was similar, more or less, to the situation of Taiwan wherein the production of sugar and rice for exports was by small-scale farmers. However, outcomes were different. In Taiwan agrarian capitalism emerged, but not in the Philippines (see discussion below). The IS strategy in the Philippines favoured capital-intensive over small- and medium-scale manufacturing, resulting in the inability of the manufacturing sector to absorb new entrants into the labour force. Thus, despite the good performance of the Philippine economy – better than that of South Korea in the 1950s – the Philippines was not able to sustain it (Table 5-1). Indeed, the country began lagging behind its Asian counterparts in the 1960s. Taiwan and South Korea experienced rapid growth in the 1960s and 1970s, but by contrast, in the Philippines a different and quite puzzling situation emerged. The limitation of trade policy in the IS period was acknowledged by Armand Fabella, the Director-General of the Program Implementation Agency. He pointed out that the weapon of foreign exchange controls proved to be extremely effective in guiding the direction of economic growth, but towards the end of the 1950s, more and more of this foreign exchange had become committed in advance: "…therefore the use of foreign exchange controls in guiding economic development became less effective as foreign exchange supply crises developed."[36]

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[32] MacIsaac, 'Nationalists, Expansionists', p. 628.

[33] "The relationship between nationalist school and Marxism", according to de Dios, has always been close but complex". But since the 1930s when Marxist thought was introduced in the Philippines, it "never won a following…quite as large as it did in Latin America." He attributes this to the political dominance and the premium placed on orthodoxy." Emmanuel S. de Dios, 'From Sancianco to Encarnación: footnotes to a genealogy of economics in the Philippines', *Philippine Review of Economics* 37 (2), December 2000, p. 40.

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[34] Ibid., pp. 35-36.
[35] Golay, *The Philippines*, p. 41.

Table 5-1
Annual average growth rates of GDP per capita in Asia, 1950s-1970s.

Country	1950s	1960s	1970s
East Asia:			
Japan	6.6	10.1	4.1
Republic of Korea	3.1	6.0	6.6
Taiwan	4.0	6.3	7.6
Hong Kong	4.5	7.2	6.8
Singapore	1.3	6.7	7.4
Simple average	**3.9**	**7.3**	**6.5**
Southeast Asia:			
Malaysia	1.0	3.3	5.0
Thailand	2.8	4.7	4.5
Indonesia	1.9	2.3	5.4
Philippines	3.6	2.2	3.3
Simple average	**2.4**	**3.1**	**4.5**

Source: Oshima (1998, p. 384)

The manufacturing industry established during the postwar period was far from being an engine of modern industrialization; it was highly dependent on imported inputs (Table 5-2). In the 1950s, oil refining, production of hand tools, food processing, car assembly, plastics, textiles, household appliances, flour milling, pharmaceuticals, chemicals, cement, construction and housing materials, finished wood products and the like, had introduced the local economy to factory production and systems of industrial organization. But these were far from being real manufacturing industries. They were merely 'mixing', 'packaging', and 'assembly' industries. John Power and Gerardo Sicat indicate that the "majority of the imported goods were 'producer goods', most of which were essential to the maintenance and expansion of employment and output in already existing industries."[37] By the 1950s the importation of these goods stabilized, and they argue this is "further evidence of the failure to sustain the pace of industrialization beyond the first stage of import substitution."[38]

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[36] Armand Fabella, 'Some aspects of the strategy of development planning', in Gerardo Sicat (ed.) *The Philippine Economy in the 1960s*. Institute of Economic and Development and Research, University of the Philippines, 1964, p. 57.

Table 5-2
Percentage distribution of imports, 1949-68.

	1949	1951-3	1955-7	1959-61	1963-5	1967-9[a]
Producer goods	62.7	76.8	81.7	86.1	83.9	87.9
Machinery and equipment	9.9	9.1	11.0	19.7	17.4	19.9
Unprocessed raw materials	1.0	1.6	4.2	10.4	15.4	13.1
Semi-processed raw materials	41.6	48.0	51.3	45.8	45.9	50.2
Supplies	10.1	18.0	15.2	10.2	5.1	4.5
Consumer goods	37.3	23.2	18.3	13.9	16.4	12.1
Durable goods	2.5	1.6	1.3	0.8	1.0	1.1
Non-durable goods	34.8	21.6	17.0	13.1	15.4	11.1

[a] First half 1969 only.
Source: Power and Sicat (1971, p.39)

That a 'packaging', 'mixing', and 'assembling' industry was established during the IS period is not surprising when we examine the rationale and details of the strategy. The reasons given by Araneta, head of the NEC (National Economic Council), as to why an IS strategy was preferred were two-fold. First, countries across the world had closed their markets to imports from abroad; therefore, the Philippines could not increase its global share of exports from their current level at that time. Second, the Philippines could not compete successfully in the world market because of its higher production costs. Araneta stated: "We do not have the mechanical efficiency and the efficient know-how of the higher developed countries."[39] The problem was indeed high production costs, but his suggested solutions were inadequate. Araneta's ideas of a 'Filipino economy', which took shape in the 1920s, were articulated during a hearing by the Joint Preparatory

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[37] Power and Sicat, *The Philippines*, p. 39.
[38] Ibid., p. 53.
[39] Salvador Araneta, *Economic Re-Examination of the Philippines: A Review of Economic Policies Dictated by Washington*. Philippines: Sahara Heritage Foundation, 2000, p. 217.

Committee on Philippine Affairs in 1937.[40] During that hearing he outlined his vision for an IS strategy to build the country's manufacturing industry. He argued that:

> During the said period, tariff and monetary autonomy should be granted to the Philippines, and the present free-trade relations should be continued, imposing from time to time, if necessary, such import quotas on Philippine commodities as are not yet subject to limitation and as may be necessary in order to limit any undue increase in our exports to the United States…During the said economic transition period, we should exert every effort to attain a more balanced economy. Without reducing the volume of our trade with the United States, we could reduce its importance in relation to our total production, which should be increased by multiplying the production of our prime necessities. The loss in the imports from the United States, which our industrialization program will entail, should be replaced with the importation from the US of more capital goods than we shall need in connection with the establishment of our industries, as well as of consumer goods of various kinds necessary to the refinements of modern life and which cannot be efficiently produced locally. The foregoing will be made possible by a concerted program of achieving a higher standard of living for our people with a more widespread distribution of the benefits derived at present from our trade relations with the United States.[41]

In recent years total factor productivity, often estimated as 'the residual' has been emphasized because this measure of productivity incorporates increases from conventional inputs of capital and labor, raw materials, economies of scale and increases arising from technological and institutional change. Although TFP measures are not always available, they have recently become much more widespread. On this account, a study by Jeffrey Williamson and Gerardo Sicat is illuminating. They have shown that average TFP of the manufacturing industry from the period 1957 to 1965 was only 1.8 percent, which they explained as the result of resources being "shifted away from the higher productivity to the lower productivity sectors."[42] A separate study by Williamson suggested that the very large variations in sectoral levels of efficiency could be explained, among others, by "the unwillingness of firms to expend funds on research and development, given the very high per unit cost of such inputs in the Philippine economy."[43] More recent studies by Caesar Cororaton (2002) and Alba (2006) show low TFP (see Chapter 1). I agree that the foreign exchange control system was problematic, not because it protected Filipino infant industries but because the industrial development strategy was made entirely dependent upon it. The trouble was that policymakers immediately embarked on a capital goods industry path based on clusters of iron, steel, and oil technologies but without an understanding that these industries are heavily reliant on R&D activities. To begin an industrial development project based on strategic technologies without an accompanying scheme of technological innovation was a useless exercise. This is clearly demonstrated by Taiwan's experience (see below). International trade policy alone is limited in its ability to build an economy's technological capabilities. Private investments by firms in knowledge-generating activities such as R&D and other innovative activities are hard to come by unless potential innovators are provided with the right social and economic incentives. Chris Freeman and Carlota Perez lament that despite the universal agreement among economists over the fact that investment behaviour and confidence and the role of innovative entrepreneur are crucial in economic change, it is still common among economists to look to self-regulating markets and monetary policy, such as interest or exchange rates as the main forces governing investment behaviour.[44]

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[40] In 1922 Araneta wrote his first article on foreign exchange, *Argumentando En Contra Del Proyecto Wood-Herrick*. He was the *Director Asociado de la Revista Escolar de Derecho* of the University of Santo Tomas at that time. On September 2, 1929, Araneta together with Cornelio Balmaceda produced a paper on *Necessary Changes in the Present Tariff Law of the Philippines*. This paper became the basis for discussion of the Harvard Club of the Philippines. In that document the authors articulated the obstacles placed by the tariff law to the development of the local manufacturing industries.

[41] Salvador Araneta, 'Statement of Mr. Salvador Araneta', Joint Preparatory Committee on Philippine Affairs, Report of September 22, 1937. Washington: US Government Printing Office, 1938, p. 650.

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[42] Jeffrey Williamson and Gerardo Sicat, 'Technical change and resource allocation in Philippine manufacturing:1957-1965', IEDR Discussion Paper, 68-21, 1968, p. 52 cf. in Power and Sicat, *The Philippines*, p. 55.
[43] Jeffrey Williamson, 'Relative price changes, adjustment dynamics and productivity growth: the case of Philippine manufacturing', *Economic Development and Cultural Change* 19 (4), 1971, p. 525.

From the Spanish period, the Philippine economy has always been characterized by balance-of-payments crises, mass poverty, and low productivity. Erik Reinert argues that "the only way such vicious circles can be broken, is by attacking the problem by first changing the productive structure itself." He points out that it is entirely possible that countries may directly join the 'internet revolution' bandwagon, but taking a backward economy directly into a *modern service* economy is not feasible in the sense that today's modern service sector depends on the demand from the manufacturing sector, therefore, deep and diverse technology-based agriculture and manufacturing sectors remain significant in the so-called information age.[45] Gregory Tassey shares this idea,[46] arguing that information technologies "facilitate the productivity of investment in a wide range of products and services that meet final demand". The efficiency advantages achieved, however, will be fleeting unless the production sectors are robust. He warns that the US economy's huge advantages in the service economy "will be fleeting unless U.S. R&D efforts produce a new and broad range of innovative products and services that take advantage of this infrastructure" because the long-term performance of the service sector is "highly dependent on synergies with a domestic manufacturing sector."

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[44] Chris Freeman and Carlota Perez, 'Structural crises of adjustment: business cycles and investment behaviour', in Giovanni Dosi, Chris Freeman, Richard Nelson, Gerald Silverberg, and Luc Soete, *Technical Change and Economic Theory*. New York: Pinter Publishers, 1988, pp. 38-66.

[45] Erik Reinert, *How Rich Countries Got Rich...and Why Poor Countries Stay Poor*. New York: Carroll and Graf Publishers, 2007, pp. 282-287.

[46] Gregory Tassey, 'Policy Issues for R&D Investment in a Knowledge-Based Economy', *Journal of Technology Transfer* 29 (2), April 2004, p. 153.

Neo-Schumpeterian NSI scholarship tells us that clusters of technologies drove high productivity growth in developed economies[47], anchored by what Chris Freeman and Luc Soete term a "research and development complex" which connects a dynamic industrial and university research system. This cluster of technologies and industries should have provided a 'window of opportunity' for the Philippines to catch up if policies for establishing a NSI accompanied the IS strategy to effect the systematic learning of these technologies both in the private and public sectors. But because steel and chemical industries which the Philippines attempted to develop in the 1950s and 1960s are a research-intensive sector, it was impractical for the country to pursue industrial R&D, given the financial difficulty. At any rate, R&D was not in the minds of technocrats who designed the IS strategy. The continued importation of capital goods, without a long-term plan for developing local components suppliers, drained the country's international dollar reserves. There was no capacity to earn dollars to replenish the reserves because the economy was import-oriented. If the Philippine economy had been export-oriented, then the dollars earned through exports could have financed the importation of capital goods.[48]

In spite of the complaints of mainstream economists, economic nationalism engendered several benefits to the Philippine society. The protectionist policy gave an institutional incentive for Filipino capitalists, mostly the landed oligarchs and merchants, to venture into industry. A 'new industrial class' was created (finally!) even if they only owned 'mixing' and 'packing' or 'assembly' enterprises.[49] That they were heavily dependent on a protectionist policy was not something to be rejected. After all, which industrialized country did not use such policy instruments, especially during their early stages of development? In fact, Power and Sicat recognized "the flexibility of this class" which "enabled its members to reap rewards on both sides of the stream [agriculture and industry], and this helped to provide finance and entrepreneurship for the development of the 1950s." The shift to industry was encouraged because items whose importation the government discouraged were simply denied foreign currency. Protectionism enabled companies to be profitable and on top of the game. The only difference was that these policies worked on restricting various trade transactions, such as foreign exchange, rather than freeing them. By withholding foreign currency for imports that competed with products of domestic industries, the foreign exchange control system protected local industries far more effectively than tariffs. Beyond that, however, there was nothing that trade policies could do to improve industry productivity. I agree with Benjamin Higgins that "no effective development plan has yet been and vigorously executed [or **formulated,** I would add] in the Philippines" despite the common perception that Filipino policymakers are very "development-minded".[50] The IS strategy which prescribed continued importation from the US of more capital goods was indicative of a failure to recognize what Bell and Pavitt emphasize – the crucial importance of building "technology change-generating capabilities". The first attempt to industrialize the Philippines without a policy for technology learning and innovation made the strategy incomplete and unfairly discredited IS. That a competitive manufacturing industry was

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[47] See, for example, Chris Freeman and Luc Soete, *The Economics of Industrial Innovation*. Cambridge, MA: MIT Press, 1997.

[48] Cesar E.A. Virata, 'Commentaries from Cesar E.A. Virata', in *Economic Re-Examination of the Philippines: A Review of Economic Policies Dictated by Washington*. Philippines: Sahara Heritage Foundation, 2000, p. xxxv.

[49] Power and Sicat (1971, p. 61) note that "During this decade, the clash between the 'new' protectionist interests, shielded under a system of controls, and the traditional export class led by the powerful sugar bloc

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became vitriolic. This did not mean that there was complete opposition between the interests. The more enterprising members of the moneyed class, including sugar-associated interests, had moved into industry as a result of the more attractive policies favouring that sector."

[50] Benjamin Higgins, in a review of Frank Golay's book 'The Philippines Public Policy and National Economic Development', *Journal of Asian Studies* 22 (1), November 1962, pp. 114-116.

not created during the IS period was not because of protectionist policies, since Taiwan was protectionist as well. Why was Taiwan successful, but not the Philippines? What Araneta and the other nationalist advocates failed to recognize was that another set of policies focused on building the technological capabilities in the industry and agriculture sectors was needed. A focus on rural-based development by aggressively introducing technology and innovation in the creation of off-farm agriculture-based industries, such as food processing and small agriculture machinery, would have offered a more feasible way to establish a flourishing domestic industry and market because of the protective policies. This would have created employment and a prosperous rural population, also broadening the tax base. The 1949 crisis was a juncture in the country's political history that could have reversed the fortunes of the Philippines. Indeed, in the 1950s a coherent historic bloc embraced industrial development. The US State Department and the WB and IMF were presented with a situation where they had no choice but to allow foreign exchange controls in order to avert government bankruptcy. The country ran out of dollars, and whatever it had earned from exports was not sufficient to cover the flood of demands for dollars to finance imports, as well as other transactions involving foreign currency. The political climate for industrial development was very favourable, but this opportunity was 'wasted'. To promote industrial development, political élites needed not only to achieve a measure of autonomy from non-industrial economic élites, but also to have the appropriate policy tools. Under President Ramon Magsaysay's administration (1953-1957), tight restrictions on the possible entry of and economic control by foreigners were secured.[51] Economic nationalism received strong support when in 1957

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[51] Yoko Yoshikawa, 'War reparations implementation, reparations-secured loans and a Treaty of Commerce', in Setsuho Ikehata and Lydia Yu Jose (eds.), *Philippines-Japan Relations*. Manila: Ateneo de

Carlos Garcia became the president of the republic upon Magsaysay's tragic death. Garcia (1957-1961) adopted a "Filipino first policy".[52] The leadership of the Central Bank of the Philippines under Miguel Cuaderno adopted a Keynesian economic policy which was favourable for establishing local industry. Refusing to give in to the demands of the laissez faire advocates, in his speech to the Rotary Club of Manila on January 26, 1950, Cuaderno responded forcefully to the criticisms hurled at him by the American Chamber of Commerce:

> The editorial in question complains that many of our officials believe that economic laws can be deflected, blocked and reversed by political means, that these natural laws can be nullified by act of legislative or executive edict. This reminds us of Adam Smith, who contended that the dabbling of legislators in the problems of business does more harm than good. The writer of the editorial either forgets or refuses to be reconciled to the fact that events of the last thirty years have called these assumptions into question. Recurring depressions and the continuing paradox of poverty in the midst of plenty are evidence that economic activity cannot regulate itself, that there is no automatic force organizing and directing business interests for the common good. Governments the world over of necessity found themselves constrained to intervene in the economic life of their people. The social economic planning of the United Kingdom and the American "New Deal" are concrete examples of intervention in the economic life of the people.[53]

The protectionist policy did not sit well with the local and foreign import-export business community, much less with the IMF, the WB, and the US State Department. The general displeasure over the foreign exchange controls was evident when in 1958 and 1959 Cuaderno and his team tried to secure a US$25 million loan for the Philippines, which was denied by the WB-IMF. The Philippine government resisted the pressure from Washington and the IMF and designed its own stabilization program by imposing a tax

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Manila University Press, 2003, p. 378.

[52] This policy was rooted on the historical animosity of Filipinos to the predominant control of the retail trade by Chinese. The impact was that many Chinese businesses shifted to industry, as well.

[53] Miguel Cuaderno, Speech before the Rotary Club of Manila, January 26, 1950.

on all foreign exchange transactions. It had stabilized the economy. In his book, Cuaderno wrote:

> Having cooperated with Fund officials…who had been very sympathetic with our problems and had extended all possible assistance, I felt very deeply the refusal of Managing Director Per Jacobson to have his staff discuss our stabilization program with our mission when he learned that the State Department did not favour it. I thought it was not good policy for an international organization such as the International Monetary Fund to allow itself to be influenced by any member country…We had a feeling that what the U.S. government officials liked us to do was to devalue the peso and remove exchange controls. Such a step had been suggested to us by both the Managing Director of the Fund and some officials of the State Department…The Fund officials must have been surprised to see that our plan was a success, despite the fact that we did not secure a stabilization loan as other countries had done in the past. A Fund mission came to Manila in February 1960 and they were pleased that as a result of the margin levy on the sale of foreign exchange…the country's payment position had improved that we were able to pay the outstanding balance of short-term loans from US private banks aggregating $35 million.[54]

Local exporters wanted the controls removed because they did not like a system that forced them to sell their dollars to the government at a rate that was controlled by government. For obvious reasons, the sugar-bloc headed by Alfredo Montelibano "argued for the removal of exchange controls and for the full retention of foreign exchange."[55] They wanted more local currency value for their dollar earnings. The foreign business community led by the American Chamber of Commerce did not like the controls because they gave advantage to local industrial capitalists in terms of priority allocation of dollars. Foreign investors wanted the controls removed because a devaluation of the peso meant higher purchasing power for their dollars in the Philippines. The nationalist leaders faced extreme external pressures from this rival transnational historic bloc in the Philippines. That's why the accusation that WB and IMF are vestiges of global forces is warranted. If these world development organizations are really there to help countries develop, the IS nationalist historic bloc should have been given enough support with their efforts to develop local industry. In 1962, while Taiwan was maintaining its foreign exchange controls, the Philippines was dismantling its controls, which meant that the liberal regime was back - thanks to a US-government-backed president, Diosdado Macapagal, and his staunch support for a free market economic system. President Macapagal knew, as Lichauco pointed out, that a liberal regime would create instability in the economy so he negotiated a $300 m loan from the IMF and the WB.[56] This time the negotiation took only two weeks because the IMF and WB got what they wanted. But the long term cost to the Philippines was huge. The national industrialization process suffered a setback. The disastrous effect of decontrol on the economy was succinctly described in the report of the NEC:

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[54] Miguel Cuaderno, *Problems of Economic Development*, p. 72, quoted in Alejandro Lichauco, *The Philippine Crisis: A Study of the Processes, Techniques and Policies that Have Kept Filipinos Poor, and What Should be Done*. Makati City: St. Pauls-Press, 1993, p. 41.

[55] de Dios, 'From Sancianco to Encarnación', p. 34.

> Industry (manufacturing) was subjected to severe repressive conditions during the period from 1962 to 1965. The effect of decontrol which increased the capital and operating requirements of industries, on one hand, coupled with the tight credit policy instituted by the government on the other, resulted in a tight squeeze greatly prejudicial to industrial enterprises. The growth of smuggling together with massive importation of consumer goods dumped from abroad subjected local enterprises to severe competition resulting in reduced sales volume. The all-out encouragement given to foreign enterprises subjected local producers to a competitive disadvantage vis-à-vis foreign enterprises. The figures indicate that industry operating under the inertia of the pre-decontrol period was able to withstand the transitional difficulties initially but finally bent over in 1965 when the output of the manufacturing sector increased by only one percent. Considering that this feeble growth rate also includes the high growth rate in electricity and fuel production, actual deterioration of the manufacturing could be implied.[57]

The tremendous power of liberal intellectuals in Philippine policymaking was introduced by President Macapagal, the IMF, and the American Chamber of Commerce during the latter part of Macapagal's administration in 1964-1965.[58] At that time these technocrats took over the PES (Office of the Presidential Economic Staff). Headed by Armand Fabella and Alejandro Melchor, the PES was in direct collision over several issues with the NEC headed by Hilarion Henares, Jr. The NEC had once been the stronghold of the economic nationalists and included the Senate, the House of Representatives, and the local private sector in its membership. Among the contentious issues was that of "vested rights". The Americans demanded that "all rights acquired by American nationals on the strength of the Amendment survive the termination of parity on grounds that those rights have become 'vested'". This would mean "making permanent privileges and rights acquired under parity". This angered the nationalists and triggered several protests. Later, under the Marcos regime government agencies, with the exception of a few dissenting voices, were almost entirely taken over by neoliberal bureaucrats. (This is elaborated further in Chapter 7). In 1965 Marcos became president of the Philippines in a landslide victory of the Nacionalista Party. Like Quezon, Marcos was a 'Filipino chieftain' par excellence whose holding power was "generated by incentives and sanctions available to him as the President and the nation's cleverest politico". His invention of the Philippines as a "new society" was a figment of his imagination. The Philippines remained patrimonial, thus plunder using state office was perpetuated. Marcos, like other presidents, used the enormous powers of a strong state for his own and his cronies' benefit. The Philippines was not a 'weak state' always captured by particularistic business interests.[59] But Marcos is not the exception. Many East Asian countries were ruled by corrupt leaders, but they are now in the ranks of the newly industrialized. Certainly, corruption does not explain everything of what ails the Philippines.

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[56] Lichauco, *The Philippine Crisis*, pp. 38-40.
[57] National Economic Council, *The Statistical Reporter*. Manila: Office of Statistical Coordination and Standards, 1969, p. 8.

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[58] Lichauco, *The Philippines Crisis*, p. 75.

[59] For example, Dañquilan-Vitug skilfully probed how Marcos, in placing upon himself the power to grant and revoke logging licenses, used the forest as a political tool against his rivals. See Marites Dañguilan-

State formation in the Philippines has developed a certain distinctive trajectory that reinforced or strengthened local government authority. Sidel points out that pre-colonial and Spanish Philippines were "distinguished by the absence of institutionalized supralocal bases for indigenous political authority", thus the "long-term preservation and progressive expansion of 'local strongman' power."[60] It is important to examine local political economic realities such as Cebu and Cavite because there are variations in political economic dynamics in the provinces and even cities and municipalities. This variation would have implications when designing development intervention. For over a century now, "the Osmeña clan remained at the center of politics in both Cebu City and Cebu Province."[61] The holding power of the Osmeñas is evidenced by three generations of the Osmeñas ruling Cebu.[62] Sidel points out that: "In contrast with the mafia-style bosses of Cavite and the municipal- and district-level dynasties of Cebu, the Osmeñas have practiced a more attenuated – but no less enduring or successful – form of bossism in the Philippines." The Osmeña family dominates the political and economic life of

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Vitug, *Power from the Forest: The Politics of Logging*. Pasig: Philippine Center for Investigative Journalism, 1993.

[60] Sidel, *Capital, Coercion and Crime*, p. 12.

[61] Ibid., p. 125.

[62] The first generation was represented by Sergio Osmeña Sr. in the prewar colonial and commonwealth period. A lawyer, scion of a wealthy Chinese *mestizo* family and educated in élite institutions in Cebu and Manila, Sergio had close ties with influential *ilustrados*. Sergio Sr. served as congressman of Cebu City and environs for five terms in the National Assembly and the House of Representatives (1907-22), vice-president of the Philippines (1935-44) and later president (1944-46) of the Philippine Commonwealth. In the postwar pre-martial law period, his son Sergio ("Serging") Osmeña Jr. was Cebu's provincial governor (1951-55), Cebu City mayor (1956-57), (1960-72), congressman (1958-61), and senator (1966-71). In the post-Marcos era, the third generation Osmeñas took power: Serging's son Tomas ("Tommy") won two successive terms as Cebu City mayor (1988-95), and nephews Emilio ("Lito") Osmeña Jr. and John ("Sonny") Osmeña served as Cebu provincial governor (1988-92) and Philippine senator (1988-95), respectively. Sergio ("Serge") Osmena III served as senator after the 1995 elections.

Cebu for most of the twentieth century, using its "urban political machine in Cebu City and its alliances with major mercantile interests in the post metropolis to entrench itself over the generations."[63] Although the Osmeñas have their material interests in land, particularly "real-estate holdings and other business concerns by means of state resources and powers"[64], with their style of rule they "do not conform to certain stereotypes about political kingpins" because, as Resil Mojares points out:

> [T]hey do not exercise monopolistic control in their bailiwick; they do not maintain "private armies" or engage in a rule of systematic, direct repression; and they are not gladhanding traditional patrons. Their main base of electoral support—Cebu Province, particularly metropolitan Cebu—is a highly urbanized area with a heterogeneous population, a complex occupational structure, a developed media infrastructure, high levels of literacy, and a large concentration of modern, voluntary organizations.[65]

The Osmeñas served as power brokers for Cebu's local oligarchy "comprising of a handful of merchant dynasties of Chinese, Spanish, and *mestizo* lineage". Sidel notes that through socialization and in some instances intermarriage with the Osmeña clan, the Gotiaocos, Chongbians, Luz, Aboitizes, Escaños, Aznars, Gaisanos, and Lhuillers had "access to government financing and contracts and guaranteed friendly regulation of their business operations." These local commercial and service interest-groups are engaged in a cartel of inter-island shipping companies, agricultural processing, copra and corn trade throughout the Visayas and Mindanao, banking, real estate, food and shopping malls, and commercial air transportation business.[66] However, Cebu's political executives seem to display some features of a modernizing élite. First, as Sidel notes, they do not use violence to extract surplus from business and although they are internally linked to the local oligarchy, yet they are capable of allowing some form of abstract or impersonal rule which permits businesses to flourish. Surplus extraction is largely undertaken in the economy rather than through public office. Such an 'entrepreneurial' political behaviour is characteristic of a modernizing élite. Nonetheless, a local economy that is dominated by commerce and service industries in which ownership is concentrated would still be far from being redistributive. Cebu has to move into building its industrial base through the development of technology-based SMEs. A strengthened relationship between universities, banking, industry, and local government could be encouraged. SMEs absorb labour as they employ more workers per unit of capital compared to large enterprises, thereby contributing towards a more equitable income distribution and alleviation of poverty. As of 1996, SMEs[67] were virtually absent in the Philippines where the largest employers are small and unorganized household firms that employ 62 percent of the sectoral labour force but contribute only 13 percent of the output.[68] There were 494,971 micro-enterprises in the country but only 20 percent were engaged in manufacturing.[69] By contrast, although the key players in the Korean economy in terms of value-added and employment generation during the early phase of Korean industrialization were big corporations,[70] today, Korean SMEs play a vital role in creating jobs, increasing income, and contributing to the rapid growth of the national economy.[71] In terms of employment, production, value-added and exports, SMEs account for 69 percent, 46 percent, 47 percent, and 42 percent, respectively.[72] As of 1997, there were about 2.64 million SMEs with 9.1 million employees.[73] This rapid growth and high performance of SMEs can be attributed to policy changes pursued by the Korean government since the 1980s.

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[63] Ibid., p. 138.
[64] Ibid.
[65] Resil Mojares, 'The dream goes on and on: three generations of the Osmeñas, 1906-1990', in Alfred McCoy (ed.) *An Anarchy of Families: State and Family in the Philippines*. Madison, WI: University of Wisconsin Center for Southeast Asian Studies, 1993, p. 312.
[66] Sidel, *Capital, Coercion, and Crime*, pp. 132-133.

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[67] In the Philippines SMEs are classified, based on total assets (excluding land), as microenterprise (assets up to PhP 1.5 million (US$37,500), small enterprise PhP1.5 to PhP15 million (US$ 37,500 – US$375,000), and medium enterprise PhP15 million to PhP60 million (US$ 375,000 – 1.5 million) (exchange rate at PhP40 = US$1, December 2000). This definition which was established by the Small and Medium Enterprise Development Council, a combined government and private-sector body created to coordinate SME policies and programs. The National Statistics Office, however, uses a definition based on employment: <10 =microenterprise; 10-99 small enterprise; and 100-199 medium enterprise.

[68] Rob Vos and Josef Yap, *The Philippine Economy: East Asia's Stray Cat? Structure, Finance and Adjustment*. Basingstoke, UK; New York: St. Martin's Press, 1996, p. 29.

[69] Meynardo Orbeta, 'National Report: Philippines', *SMEs in Competitive Markets*. Tokyo: Asian Productivity Organization, 2002, p. 260.

Sidel's empirical study of the provincial 'bosses' of Cavite illustrates how local political executives present themselves as warlords who wield enormous power for inducements and threats within their territorial jurisdictions. He points out that the present crop of 'bosses' in Cavite descended from the landed friars' "favoured few" – known as *inquilinos* – with leaseholds on large tracts of land, for subleasing to subtenant-cultivators and substantial rentier profits. The *inquilinos* became the local élite whose scions were the *gobernadorcillos* and *cabezas de barangay* which later became the "upper echelons" or *ilustrados* of the revolutionary leadership in Cavite.[74] In his study of Cavite politics, Sidel observes that these generations of provincial 'bosses' "used their mastery over state resources to construct province-wide political machines and economic empires."[75] They used the coercive and regulatory powers of their office to extract wealth from both public (through access to government financial institutions and pork-barrel funds) and private spheres (through legal and illegal contracts and monopoly franchises).[76] Today, Cavite is teeming with industrial estates and accompanying amenities, typical of export processing zones where electronic TNCs engaged in assembly businesses are located. Home to Emilio Aguinaldo, the *ilustrado* who ruined the 1896 Philippine Revolution, Cavite presently boasts and proudly announces to anyone visiting the province: "Cavite's 2nd Revolution", featuring "Industrialization, Agricultural Modernization, Tourism Development, and Rapid Urbanization".[77] But real industrialization is still far away because the high-tech industry in the Philippines is an enclave and strictly an import-export business.

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[70] Byung-Nak Song, *The Rise of the Korean Economy*, Second Edition. Oxford: Oxford University Press, 1997, pp.111-113.
[71] In South Korea a small and medium enterprise employs less than 300 persons. However, there is an exception to this rule in the sense that even if a firm satisfies the above-mentioned criterion it cannot be classified as an SME if it is under the control of 30 conglomerates designated by the Fair Trade Commission based on the Act on Anti-trust and Fair Trade Competition. See Youn Jai Lee, 'Role and experience of SMEs in South Korea', in Moha Asri Abdullah and Mohd. Isa Bin Bakar (eds.), *Small and Medium Enterprises in Asian Pacific Countries, Volume I Roles and Issues*. Huntington, NY: Nova Science Publishers, Inc., 2000, p.40).
[72] Cheol Ho Oh, 'National report: Republic of Korea', in *SMEs in Competitive Markets*. Tokyo: Asian Productivity Organization, 2002, pp. 123-4.
[73] Lee, 'Role and experience of SMEs in South Korea', pp. 39-41.
[74] Sidel, *Capital, Coercion and Crime*, p. 55.

Temario Rivera's work on the IS fraction of the Philippine manufacturing sector clearly shows that the IS bourgeoisie was "dominated by major landed élite families and merchant capitalists who diversified into manufacturing during the 1950s and 1960s."[78] Arguably, in the case of the Philippines both landlords and merchants comprise the 'new industrial class'. These economic forces then were not tradition-bound and were willing to invest in sectors outside of agriculture and trade. They were capable of responding to institutional environments established by government, enabling them to shift to industry. The 'industrial' bourgeois class in the Philippines has three segments: the landed, the non-landed, and the Filipino-Chinese capitalists. This categorization seems odd but

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[75] The succession of provincial warlords which dominated 20th-century Cavite began with Emilio Aguinaldo (1901-35), then followed by Justiniano Montano Sr. (1935-72), and Juanito Remulla (1979-95).

[76] Sidel, *Capital, Coercion and Crime*, p. 79.

[77] Ibid., p. 72.

[78] Temario Rivera, *Landlord and Capitalists: Class, Family, and State in Philippine Manufacturing*. Quezon City: The University of the Philippines Press, 1994, p. 2.

warranted when the specific circumstances surrounding the "different kinds of relationship between state and capital" are examined in the context of enduring structures related to the evolution of the Philippine society. 'Chinese capital' does not belong to the landed aristocrats or the political élite. They do not use state offices for private accumulation of capital, but their relationship with the state and other business is mediated almost entirely by money. This, however, reinforced the entrenchment of traditional bureaucrats and politicians. The landed segment is distinct from the other two in the sense that it has a long tradition of political power in national politics.[79] But as with the merchants, the landed oligarchs proved adaptable, as the studies of Rivera as well as that of Leonora Angeles have shown.[80] What is interesting in Angeles' study is that some of these political élites were not necessarily landed, but they got into their positions and built vast wealth through their professional practice. Her account of the history of the Zubiri and the Tabios political dynasties in Bukidnon was, in particular, very interesting because it narrates how non-landed political and economic elites in the Mindanao Islands have been formed among "migrant homesteaders, civil servants, school teachers, engineers, and technicians from Luzon and Visayas (Islands)." The public education system at least provided some form of mobility to Filipinos. For many, to be educated meant having the ticket to leave the country and be part of the global pool of migrant workers. For a few Filipinos the public education system and the Filipinization of civil bureaucracy during the American colonial period provided an avenue to join the merchant and financial bourgeoisie. The Zubiris and the Tabioses represent the educated class, but instead of engaging in industrial ventures they have engaged in trading/financing businesses. The country's education system is not producing many inventor-entrepreneurs or engineer-entrepreneurs, unlike the UK (Chapter 3), US and Japan (Chapter 4).

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[79] Handelman, *The Challenge of Third World development*, p. 147.

[80] Leonora Angeles, 'The political dimension in the agrarian question: strategies of resilience and political entrepreneurship of agrarian elite families in a Philippine province', *Rural Sociology* 64 (4), 1999, pp. 667-692.

5.2 Taiwan's successful IS-*cum*-EP strategy

The Japanese colonial legacy in Taiwan (and South Korea) was different from the Spanish and US colonial legacies in the Philippines. I argue that Taiwan (and South Korea) inherited modern colonial structures during Japan's occupation. Japan, seeking to convince the West that it was "neither *terra nullis* nor isle of savages", as Shelly Riggers puts it, but a modern nation on the road to economic and political self development", grabbed the opportunity to make Taiwan and South Korea "model colonies."[81] Moreover, in the case of Taiwan, Japan was wary about "subversion from mainland China" as they moved toward war in the 1920s and 1930s. Given these constraints in international relations, Riggers argues, imperial Japan implemented a policy of "combined assimilation and discrimination" towards its colonies. For nearly half a century, colonial Taiwan (and South Korea) were assimilated as **modern** political economies, which laid the foundation for their postwar economic development.[82] Even though the Japanese colonial government introduced land reform during the same period in Taiwan and South Korea, many landlords retained large landholdings. The difference lay in the fact that the Japanese established technology-based and highly productive agriculture sectors which catalyzed the agrarian capitalist transformation of these colonies. This did not happen in the Philippines.

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[81] See, for example, Shelley Riggers, *Politics in Taiwan: Voting for Democracy.* London and New York: Routledge, 1999, p. 34

[82] This is, of course, a subject of intense debate among scholars. See, for example; Atul Kohli, 'Where do high growth political economies come from? The Japanese lineage of Korea's 'developmental state', *World Development* 22 (9), 1994, pp. 1269-1293; Stephan Haggard, David Kang and Chung-in Moon, 'Japanese colonialism and the Korean development: a critique', *World Development* 26 (6), 1997, 867-881; Atul Kohli, 'Japanese colonialism and Korean development': a reply', *World Development* 25 (6), 1997, pp. 883-888.

Agrarian capitalism is crucial in creating conditions for industrial development (Chapter 1). I suggest that its presence or absence influenced the varied outcomes between the Philippines' failed attempt towards industrialization and Taiwan's (and South Korea's) successes. But the question is: how did agrarian capitalism emerge in South Korea and Taiwan and not in the Philippines? To answer this question, we need to tease out the similarities and differences of these societies' social conditions before the 1950s. Some argue, such as M.D. Litonjua, that the crucial difference lies "in the different roles and functions that the different colonizers assigned to their colonies."[83] For instance, South Korea, Taiwan and the Philippines were all 'agricultural appendages' of their colonial masters, but later South Korea and Taiwan were made 'industrial adjuncts' by a rapidly industrializing Japan, but not the Philippines by an industrialized US. I argue that Japan's most important colonial legacy was introducing agrarian capitalism into Taiwan (and South Korea), which consequently created the 'seed' of capitalist social forces and interest that would later play a central role in these economies' industrial development. Japanese colonization, like that of US and all other colonizers, was brutal. Confronted by a different structural constraint, Japan adopted a different political economic path from the US, its rival empire in the Pacific. There were pre-industrial policies which Japan imposed on its colonies which facilitated the successful conversion of feudal property relations into capitalist relations and this was brought to fruition in the agriculture sector. Taiwan was under Japan's control under the Treaty of Shimonoseki of 1895 when China suffered a disastrous defeat at the hands of the Japanese. As part of the settlement, China was forced to hand over Taiwan to Japan.[84] At the end of World War II, Japan was forced to surrender its colonies to the Allied Powers, effectively handing control to the ROC (Republic of China) leader, Chiang K'ai-shek. By that time, Riggers points out, "Taiwan outpaced mainland China in nearly every measure of national development – per capita income, economic infrastructure, health, educational attainment, and so on."[85] The bedrock for these economies' modern transformation was the political decision of the Japanese colonial government to break the power of the local landowning élite in order to achieve the goals of high productivity for surplus extraction to support Japan's and later the colonial economies' industrial development. Prior to Japanese occupation, Taiwan had an established three-tier leasehold land system.[86] This gave rise to a landlord/capitalist/tenant-wage labor structure which made possible the transformation of agricultural production. Robert Brenner believes that lands rented to farmers forced them to market higher output to pay the rent, and these producers were driven to specialize and innovate by market competition.[87] Realizing that the landowning class would be a hindrance to their goals, an

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[83] M. D. Litonjua, 'Outside the den of dragons: the Philippines and NICs of Asia', *Studies in Comparative International Development*' 28 (4), 1994, p.13.

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[84] Rigger, *Politics in Taiwan,* p. 34

[85] Ibid., p. 24.

[86] The Manchu Ch'ing dynasty was extended to Taiwan in 1683 which made all lands the property of the emperor; however, Richard Grabowski points out, temporary property rights were accorded to wealthy individuals if they were able to bring new land under cultivation, and this created the *k'en-hu* landowning class, which later became the powerful absentee landlord class, *ta-tsu*. These lands were, in turn, rented out to farmers called *t'ien-hu* who were mostly from mainland China, and later became *hsiao-tsu* as they leased their land to new immigrants. A land tax was levied by the Ch'ing officials but it was the *ta-tsu* landowners who were responsible for paying to the emperor (p. 182).

[87] Robert Brenner, 'The social basis of economic development', in John E. Roemer (ed.), *Analytical Marxism*. Cambridge, England: Cambridge University Press, 1986, pp. 23-53.

extensive land survey for determining land values and taxes was undertaken by the Japanese colonial government in 1897 which uncovered nearly 40,000 *ta-tsu* landowning households in Taiwan in 1903 when the survey was completed. The colonial government, according to Ramon Myers and Adrienne Ching, gave landowners long-term bonds in return for their claims to the land, and appropriated ownership of the lands that *hsiao-tsu* leaseholders cultivated.[88] Despite the fact that land ownership was still skewed in favour of larger owners, the initial land reform eliminated the land rights of the top level (absentee landlords) and the individuals actually farming the lands (directly or indirectly through tenant labor) became the legal owners. Consequently, sugar and rice which were the main export crops were not produced in large plantation-type farms, but rather on small, family-run farms, hence a large segment of the farming communities benefited from the commercialization of these crops.[89] The impact of the change in landownership policy was felt in the further commercialization of the agricultural sector. Whether it was intended or not by the colonial government, agrarian capitalist development in Taiwan (and Korea) was facilitated through the colonial government's focus on increased productivity and application of new technologies combined with an extension system which inevitably integrated the system of technology development and production in the agriculture sector. Richard Grabowski points out that Japanese capitalists, enticed by the colonial government through subsidies, moved to Taiwan and gained control of the milling, refining, and marketing of sugar, thus putting indigenous mills and refineries out of business or they were absorbed by Japanese capital. Taiwanese-dominated sugar production was vertically linked to Japanese-controlled milling, refining and marketing, and this made the former vulnerable to Japanese exploitation. However, growing rice was an alternative opportunity for sugar farmers to earn income. The Japanese then had the interest of keeping rice relatively cheap so that resources were eventually allocated to the rice production sector to increase production. The intervention, however, was focused on both physical and social infrastructure improvement, such as irrigation systems, roads, supply of fertilizers, high-yielding varieties and a strong extension system. Thus, when demand for rice in Japan increased enormously from 1918 through the 1930s, Taiwan's rice sector became highly commercialized, thus benefiting rice farmers as well as sugar farmers.[90]

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[88] Ramon H. Myers and Adrienne Ching, 'Agricultural development in Taiwan under Japanese colonial rule', *Journal of Asian Studies* 23, 1964, p. 560-562. Despite this initial reform, land ownership was still "highly skewed in favor of the larger landowners, with some 90 percent of farm households owning only about 40 percent of the cultivated land." Nonetheless, throughout the colonial period the average size of farms was 1.97 hectares, and many of the cultivators were tenants, part-owners or part-tenants. See, for example, Bruce F. Johnston and Peter Kilby, *Agriculture and Structural Transformation: Economic Strategies in Late-Developing Countries*. New York: Oxford University Press, 1975, p. 249.

[89] Richard Grabowski, 'East Asia, land reform and economic development', *Canadian Journal of Development Studies* 23 (1), 2002, p. 121.

What was significant in the transformation of the agrarian sectors of Taiwan (and Korea) was obviously the systems approach in the introduction of technology. To be useful for the economy, technology and innovation had to be diffused to its users, thus it created various supporting institutions, such as Farmer's Associations, Small Agricultural Units, and Agricultural Cooperatives to complement the agricultural research experiment stations. In 1903, the Taiwan Agricultural Research Institute was established. The cooperative movement in the rice sector was set up to "carry out storage, trade, processing, credit, transportation and even export trade", and was extremely important in terms of strengthening the position of tenant farmers.[91] Sharmistha Self and Richard Grabowski showed that "improvements in agricultural technology are a pre-condition to, and have a significant positive impact on, long-run growth…and countries…that did not improve agricultural technology…did not grow as fast as those that did."[92] They argue that "before the industrialization process can occur, an increase in agricultural productivity must occur", and they suggested that this strategy "may indeed be easier for less developed nations to bring about", which means that "the potential for raising agricultural productivity may be very great, providing the foundation for rapid overall growth."[93] Prosperous farm populations energize the economy as they, together with urban population, increase the demand for manufactures and support industrial diversification. In 17th-century England, 18th-century US, and 19th-century Japan, for example, a growing agriculture economy reinforced rapid industrialization of the regional metropolises. Agricultural surplus extraction was through the land tax imposed by the colonial government so that the burden fell mainly on the rural sector. In fact, Samuel Ho points out that government revenue from these sources was approximately 25-30 percent of the value of agricultural production in Taiwan.[94] But much of this revenue was used to finance rural infrastructure, such as irrigation and research and development activities as well as to provide for the health and education needs of the Taiwanese. A large portion of the revenues was also used to develop communication and transportation facilities, such as railways and roads. Industrial development in Taiwan (and Korea) was supported by the surplus extracted from the agriculture sector. Between 1915 and 1940, the number of private factories increased by four-fold from 60,000 in 1920 to 256,000 in 1939 in

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[90] Ibid., p. 121-122.
[91] Ka, *Japanese Colonialism in Taiwan*, p. 173.

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[92] Sharmistha Self and Richard Grabowski, 'Economic development and the role of agricultural technology', *Agricultural Economics* 36, 2007, p. 395.
[93] Ibid., p. 396.
[94] Samuel Pao-San Ho, 'Agricultural transformation under colonialism: the case of Taiwan', *Journal of Economic History* 28, 1968, p. 338.

Taiwan.[95] Industrial growth was in the food processing industry consistent with the government's objective to drive industrial development through the agriculture sector. Most of these were SMEs with a large proportion of the firms created as joint stock ownership, and some in limited partnership. Given the rapid growth in agricultural productivity and the small operational size of the farms, a thriving domestic market for simple manufacturing goods was developed. Of course, Japan benefited from this process as it supplied the capital goods requirements of the colonies' economy. Robert Bates argues that there has been "a failure to appreciate the political implications of technological change".[96] Technological change can be used as an effective tool to induce change, especially the redistribution of power in agrarian economies. In the cases of Taiwan (and Korea), rapid growth in agricultural productivity through technological change and increased commercialization improved the incomes of tenants. This, in turn, created a situation wherein peasant unrest grew, and disputes were not about increasing landlessness among peasants because statistics do not support such a conclusion.[97] The primary reason for these disputes was that moneyed tenants became more aggressive in their demands in terms of formal and informal contracts with landlords. This instability influenced the orientation and behaviour of the landlords, increasing their involvement with non-agricultural economic activities. The period of growing prosperity in Japan's countryside was accompanied by a dramatic rise of anti-landlord tenant disputes. Statistics indicate that between 1920 and 1941, 72,027 anti-landlord tenant disputes, involving 488,737 landlords, 1,859,377 tenant farmers, and 1,234,958 *cho* of land occurred.[98] Japanese farmers resisted tax increases and interference with rural commerce and production. During this period, Japan promoted industrialization in the colony.[99] The disputes were to alter the terms of trade between landlords and tenants. In 1934, the colonial government instituted the Agricultural Lands Ordinance guaranteeing tenancy contracts of at least three years, allowing tenants to propose rent reduction in the event of crop failure, and an automatic renewal of the rental contract as long as there were no violations. Disputes were mostly ruled in favour of the tenants (80 percent) so that rental rates from 1933 to 1938 for paddy fields dropped, especially in the more commercialized southern regions. As a result, landlords began to divert some of their capital investment into non-agricultural areas, especially commerce and industry. In Taiwan, tenant-landlord disputes occurred in rice growing regions, and the severity of the problem could be discerned by the establishment of the colonial government of tenant-landlord associations that could serve as a mechanism for settling disputes, and formalizing and securing contracts.

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[95] Richard Grabowski, 'Taiwanese economic development: an alternative interpretation', *Development and Change* 19, 1988, p. 58.

[96] Robert Bates, 'Urban bias: a fresh look', in A. Varshney (ed.), *Beyond Urban Bias*. London: Frank Cass and Co., Ltd., 1993, p. 226.

[97] Ibid., p. 59-63.

In Taiwan (and South Korea), Japanese colonization in the late 19th and early 20th centuries resulted in what I consider a 'real' assimilation which gave a different dynamic and facilitated the emergence of agrarian capitalism. When compared to the Philippine experience, what was remarkably different was that modernization in Japanese Taiwan (and Korea) took a priority in the development of the economy and bureaucracy in that order. In the Philippines 'democratic tutelage' emphasized the introduction of an electoral system in the political structure without any changes in the economy and bureaucracy, while Japan transformed Taiwan (and South Korea) into modern social formations.

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[98] Smethurst 1986, p. 42-43, cited in Grabowski, 'East Asia, land reform', p. 117.
[99] Ibid., p. 118.

Japan's colonial legacy was the establishment of economic institutions supporting a process of surplus accumulation through market and productive efficiency rather than through the state apparatus and coercion. The integration of research, information, credit, and marketing institutions established by the colonial state facilitated the development, diffusion, and utilization of technology in the agriculture-based economy – a NSI that was to work on the same principle during the postwar industrialization era. Although much of the benefit, initially, went to Japan, this was changed with Taiwan's independence in 1940 and South Korea's in 1945.[100] Grabowski argues that the social, economic and political conditions generated during this period enabled Taiwan to pursue an outward-oriented strategy of development in the 1960s and 1970s.[101] It was only in 1919 that Japan installed a civilian Japanese governor-general in Taiwan, and this was followed by the establishment of assemblies in each of Taiwan's prefectures. Local Taiwanese executives received advice from Japanese appointed representatives in matters of local governance. In 1921 nine Taiwanese joined the governor-general's consultative council[102], a political structure quite similar to the Philippine Commission installed in 1901 by the Americans in the Philippines. Riggers points out that with war against Mainland China looming an election system for local assemblies was instituted in 1935 in which the members' duties included making decisions over local budgets and taxes.[103] Riggers argues that this was designed to "draw local élites [the landlords] into a political apparatus controlled by the colonial authorities, and also to set them against one another and make them dependent on the higher ups."[104] These elections were élitist and discriminating against women, as only men over 25 years of age who paid taxes of more than five yen were allowed to vote. The League for Local Self-Government was, consequently, established and the aspiration of some Taiwanese for 'home rule' at the national level was put aside because they realized "it was the only mode of participation available for them." After 1935, the colony's local assemblies were composed of 172 members; 109 were Japanese (60 appointed and 49 elected), and 63 were Taiwanese (26 appointed and 37 elected). The governor-general's council was enlarged to 40 members with 17 new Taiwanese members. Riggers points out that this had changed by the late 1930s as changes in the political climate in Tokyo displaced civilian authorities with military adventurers. The difference was that rapid growth in agricultural productivity through technological change and increased commercialization improved the incomes of Taiwanese farmers. The approach used in Taiwan has integrated technology application, credit availability, and marketing. By contrast, in the Philippines there was less capital investment and mechanization and, as Golay points out, there was "little awareness of innovation in the entrepreneurial sense", relying on "static technology of the last three centuries."[105] Because marketing was not organized, farmers became easy victims of traders.

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[100] Grabowski, 'Peasant agriculture', p. 171.
[101] Grabowski, 'Taiwanese economic development', p. 53.
[102] Riggers, *Politics in Taiwan*, pp. 35-36.
[103] George H. Kerr, *Formosa: Licensed Revolution and the Home Rule Movement, 1895-1945.* Honolulu: University Press of Hawaii, 1994, p. 169.

The defeat of Japanese forces in World War II forced Japan to transfer its control of Taiwan to the Nationalist Chinese government of the ROC (Republic of China) as agreed at the Cairo and Potsdam Conference. The Chinese government dominated by the Kuomintang (KMT) replaced, according to Shelley Riggers, "the strict but honest and efficient Japanese colonial government".[106] Chinese government officials doubted the loyalty of the Taiwanese as the latter was, for many years, under their enemy's rule. As a result, the Taiwanese were significantly discriminated against in favour of the Mainlanders for government positions. Approximately 36,000 Taiwanese public employees were not able to hold on to their jobs under the new regime.[107] The Chinese government was a disappointment to the Taiwanese, who felt marginalized by a government for whom they thought they would have more affinity than the colonial Japanese. What is more, the Chinese government "saw Taiwan's riches as a bonanza for the ROC" expecting the Taiwanese "to volunteer their economy and society in the service of the war against communism."[108] Taiwan's nascent industrial base, heavily damaged during the war, rapidly deteriorated; unemployment and inflation rose, and the rice shortage in 1947 sparked an uprising against the Chinese government. Brutal repression followed, with thousands of Taiwanese either killed or incarcerated. Riggers points out that the incident had significant implications for the relationship between the Mainlanders and Taiwanese: the Taiwanese did not trust their new government, just as much as their loyalty was questioned by the Chinese government, and an 'ethnic' cleavage and feeling of animosity between the two groups was created. In 1948 the ROC government declared Taiwan a province, and held elections at that time and again in 1951 for a provincial assembly as well as county and township officials. The year 1949 was politically significant because the Chiang K'ai-shek government transferred its seat from the mainland upon its defeat by the communists. This development changed the attitude of the KMT toward Taiwan: "the facile exploitation of the island ended." The Communist threat to Taiwan made the US the ROC's strong ally and meant that the government's authoritarian regime had the US government's blessing. In theory, Riggers argues, the Chinese government was a decentralized democratic state with elected executives and legislatures at each level of government. In practice, however, the power of the non-elected elements in the central government prevailed over those of the elected officials and local authorities. The Executive Yuan was composed of the cabinet and central government ministries whose members, nearly all Kuomintang, were appointed by the president and approved by the Legislative Yuan. The head of the Executive Yuan was the premier who was appointed by the president, and was accountable to the legislature. But in practice, it was the president that dominated, and also headed the Kuomintang. Until 1996, the president was elected by the National Assembly, but most of the Assembly members and the Legislative Yuan were KMTs. Thus, Riggers argues, the law-making bodies became a 'rubber stamp' which played very little role in policymaking. As Ping-lung Jiang and Wen-cheng Wu put it: "all important and not-so-important policies have to be decided first by the [KMT] Central Standing Committee…If legislation is required, party members of the Legislative Yuan are asked to fulfill the formalities."[109]

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[104] Riggers, *Politics in Taiwan*, pp. 36, 37.
[105] Ibid., p. 23.

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[106] Riggers, *Politics in Taiwan*, p. 56.

[107] Lai Tse-han, Ramon H. Myers, and Wei Wou, *A Tragic Beginning: The Taiwan Uprising of February 28, 1947*. Stanford, CA: Stanford University Press, 1991, p. 66.

[108] Riggers, *Politics in Taiwan*, p. 56.

It is often argued that Taiwan's successful agrarian reform imposed by the US because of the communist threat was the cornerstone of its postwar industrial development. This is just half of the story. As discussed earlier, Japanese colonialism in pre-war Taiwan had already disrupted the old order and engendered prewar agrarian capitalism which largely contributed to the success of postwar agrarian reform. Also, the

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[109] Ping-lung Jiang and Wen-cheng Wu, 'The changing role of the KMT in Taiwan's political system', in Tun-jen Cheng and Stephan Haggard (eds.), *Political Change in Taiwan*. Boulder, CO: Lynne Rienner, 1992, p. 91.

Japanese colonial government in the 1930s, as it waged war against China, began industrializing Taiwan, as shown by the expansion and modernization of existing light industries and the establishment of heavy industries, such as machine-making, shipbuilding and petroleum refining.[110] Thus, Mo-Huan Hsing points out, from 1936 to 1942 there was an "industrial boom", but this was destroyed during the Pacific War.[111] An industrial sector had been growing in pre-war Taiwan, although it was still fundamentally a highly productive agriculture economy. Rural development in Taiwan was anchored by a comprehensive land reform program and democratization of extension services carried out between 1949 and 1953. Many scholars credited these reforms with levelling the distribution of income and wealth, rising agricultural productivity, declining unemployment due to intensification of labor inputs, and stimulating industrial development due to a growing market demand for goods by farming communities' rising incomes, increasing net capital flow from agriculture.[112] Improvements in the provision of credit, water, fertilizer, and insecticides through farmers' associations came under the control of small farmers.[113] Harry Oshima points out the reforms secured land tenure and drastically reduced rents which had been one-half to two-thirds of the harvested crop value. Then land redistribution followed where the government bought the lands in excess of the six hectares that landlords were allowed to retain and distributed them to tenants. Without successful rural development, Oshima argues, a flourishing domestic market could not have been created to support young industries until they became efficient enough to advance into foreign markets. The income from off-farm activities enabled low-income farmers to mechanize their farms and afford to pay for the education of their children who would make up the labour force for the industries. The simultaneous development of farms and the provision of off-farm income through agri-based industry were crucial in Taiwan's early development.[114] Taiwan's early industrialization was primarily "an extension of its agricultural development", whereby the leading industries were those closely linked to agriculture, such as food processing, textiles, and basic machinery.[115] The government was guided by its vision to "develop[ing] agriculture by virtue of industry and foster[ing] industry by virtue of agriculture".[116] The JCRR (Joint Commission on Rural Reconstruction), which advised on land reform between 1949 through to 1953, identified and pushed for the development of food processing industries. Although postwar enterprises were organized mostly as public enterprises, these followed a capitalist logic of high productivity and technology investment. Moreover, outside of public enterprises, enormous number of SMEs was established and became the bedrock of Taiwan's economy such that by the mid-1960s they outproduced the huge public sector economy. In comparison, by the end of 1949 the trade-based Philippine economy was reeling in financial crisis. Taiwan's was on its way to recovery from the war. Rice production recovered 87 percent of its prewar peak and sweet potato production, as well; sugar and canned pineapple export levels recovered, and as Hsing points out, the ten-fold increase in the production of cotton fabrics was remarkable.[117]

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[110] Mo-Huan Hsing, *Taiwan: Industrialization and Trade Policies*. London, New York and Kuala Lumpur: Oxford University Press, 1971, p. 148.

[111] Ibid, p. 149.

[112] See, for example, John C.H. Fei, Gustav Ranis, and Shirley W.Y. Kuo, *Growth with Equity: The Taiwan Case*. New York: Oxford University Press, 1979; Samuel Pao-San Ho, *Economic Development of Taiwan, 1860-1970*. New Haven, CT: Yale University Press, 1978; Anthony Y.C. Koo, *The Role of Land Reform in Economic Development: A Case Study of Taiwan*. New York: Praeger, 1968; Teng-hui Lee, *Intersectoral Capital Flows in the Economic Development of Taiwan, 1895-1960*. Ithaca, NY: Cornell University Press, 1971; Eric Thorbecke, 'Agricultural development', in Walter Galenson (ed.), *Economic Growth and Structural Change in Taiwan: The Postwar Experience of the Republic of China*. Ithaca, NY: Cornell University Press, 1979; Martin M.C. Yang, *Socio-Economic Results of Land Reform in Taiwan*. Honolulu: East-west Center Press, 1970.

[113] Harry Oshima, 'Income distribution policies in East Asia', *The Developing Economies* 36 (4), 1998, p. 365.

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[114] Ibid., p. 382.
[115] Ho, *Economic Development of Taiwan*, p. 73.
[116] Hsing, *Taiwan: Industrialization and Trade Policies*, p.185; Ho, *Economic Development of Taiwan*, p.105.

What was noteworthy was the presence of a developmental bureaucracy. Taiwan's bureaucrats or 'political entrepreneurs' (used not in a negative sense of the word), Walter Arnold argues, "have long recognized the salience of technological progress for industrial development".[118] Much of Taiwan's postwar development was due to the foresight and enormous influence of well-respected technocrats who were developmental in their thinking. Moreover, these bureaucrats had nascent industrial forces to work with – the outcome of Japanese colonialism. Known as "cabinet modernizers", this influential group were a strong voice of "technocratic point of view". The group was led by Chen Cheng in 1959, and Yin Zhongrong (K.Y. Yin) was an influential supporter of postwar developmental reforms. After Yin's death in 1963, his protégé and an industrialist, Li Kwoh-ting (popularly known as K.T. Li), remained a strong voice of support within the cabinet.[119] Li was well-known in Taiwan and internationally as Taiwan's "father of technology' and the "father of the economy". His life as a public servant for more than 40 years was closely connected to Taiwan's development.[120] That Taiwan had a developmental bureaucracy does not mean that it was not corrupt like the Philippines. Popular perceptions in Taiwan held that "under the KMT, corruption and cronyism thoroughly infested government at all levels" so that the opposition DPP party's rallying point was to reform the government and get rid of "the KMT gang" and the "black-gold or corruption money, endemic in [Taiwanese] politics".[121] Black-gold politics included the KMT's ties to organized crime which alienated Taiwan's voters to the Party. That "cozy ties between government and big business" are entrenched in Taiwan after half a century of KMT rule makes it no different from the crony political economy in the Philippines. This relationship between the state and business which exists in both Taiwan's authoritarian state and in the Philippines' democratic state hence does not explain the failed industrial development in one and success in the other. Thus, I insist that the difference lies in Taiwan's developmental bureaucratic élite and the Philippines' anti-developmental cosmopolitan élite. A modern state is primarily concerned with high productivity in agriculture and industry, and this is only possible with technological change. High productivity means improved income. Where high productivity and efficiency are absent, businesses resort to rent-seeking in order to survive competition.[122]

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[117] Ibid., p. 150.
[118] Walter Arnold, 'Science and technology development in Taiwan and South Korea', *Asian Survey* 28 (4), 1988, p. 444.
[119] Alan P.L. Liu, *Phoenix and the Lame lion: Modernization in Taiwan and Mainland China, 1950-1980*. Stanford, CA: Hoover Institution Press, 1987, pp. 51-61.
[120] Yueh-wen Chiu, 'Li Kwoh-ting: a life of contributions', June 6, 2001, http://taiwanjournal.nat.gov.tx/ct.asp?xltem=18730&C+Node=118.

NSI scholarship suggests technology and innovation are endogenous to a dynamic capitalist development. This means that the new technological innovation do not simply accompany economic growth but that economic growth depends on technology and innovation, bringing about economic transformation from within the structure rather than from without. The Taiwanese technocrats understood that government has to play a role because technology-changing capabilities cannot be generated by market mechanisms alone. Technology is not only the actual new product or process but also the productive knowledge that is embodied in the product or process itself. But because the production of technology and innovation is costly and risky, government has to provide an environment that encourages business to take the risks. Technological progress depends on the knowledge gained through past learning experiences and social networks because of uncertainties arising from R&D activities within the specified performance and cost level, and the marketability of the product. In other words, productive knowledge is always developed, improved, or diffused into the economy in an integrated context. NSI proponents assert that for technology to be useful, it has to be diffused in the economy, but for an effective diffusion there has to be coherence among economic, technological, political and cultural forces. Integration is the role reserved for the capitalist state which acts as 'the cohesive factor' or the 'nodal point of the process of transformation.' The Taiwanese government played that role during the high-growth period of the 1950s and 1960s. It was an IS strategy where 'technology-based' production and 'managed' trade were salient components that drove Taiwan's success story. This strategy was advanced by the most powerful government agencies, the Ministries of Economic Affairs and Finance through influential bureaucrats who understood the role of technology and innovation in moving an economy towards sustained rapid economic growth. Representative of those top-ranking technocrat and intellectuals, occupying powerful cabinet positions as Minister of Economic Affairs and later Minister of Finance, was Li-Kwoh-ting (called K.T. Li for the Taiwanese).[123] He had the privilege of advancing his vision and ideas of Taiwan's economic development. Li contended that Sun-Yat-Sen's doctrine – the three principles of the people (nationalism, democracy, and people's livelihood) – provided the framework for the bureaucrats to transform Taiwan into a modern economy. It played an important role in encouraging government officials to use state power for improving the lives of the Chinese rather than favouring certain privileged groups. Hsing points out that 1952 was the "breaking point between the end of post-war recovery and the beginning of true development in later years." The Government decided to create the Industrial Development Commission under the Economic Stabilization Board in July 1953, and embarked on an aggressive postwar industrial development contained in a series of Four-Year Economic Plans, 1953-56, 1957-60, 1961-64, and 1965-68.[124] Industrial development in Taiwan was predominantly labor-intensive, and the rapid growth of these industries generated jobs and full employment, which was reached by the late 1960s. IS policies, such as tariff, import controls, and multiple exchanges were implemented, but when the easy phase of IS was completed, policies were adopted to promote export-oriented industries, primarily textile products, rubber, and plastic products, small machinery, and food. The shift from IS to export-led growth began in the Second Four-Year Plan of 1957-60 and was strongly re-enforced in the Third Four-Year Plan of 1961-64.[125] These policies, combined with

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[121] Jeeyang Rhee Baum, 'Breaking authoritarian bonds: the political origins of the Taiwan Administrative Procedure Act', *Journal of East Asian Studies* 5, 2005, p.380.

[122] 'Rent-seeking' is defined as "activities which seek to create, maintain, or change the rights and institutions on which particular rents are based". See Mustaq Khan and Jomo K.S. *Rent-Seeking and Economic Development: Theory and Evidence in Asia.* Cambridge: Cambridge University Press, 2000. p.18.

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[123] In the 1940s, Li had moved to Taiwan from China and became the president of Taiwan's Shipbuilding Corporation. In 1953, he was invited to work for the government as a member of the Industrial Development Committee under the Economic Stabilization Board, and during that stint he started to formulate his vision for Taiwan's industrial development. Anon-economist, Li was invited to lead Taiwan's

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Ministry of Economic Affairs in 1965. But he was a man who was not unfamiliar with the role of technology in economic development. Li was a physicist educated at Central University in Nanking and the Emmanuel College of Cambridge University. See, for example, Ramon H. Myers, 'K.T. Li. The Evolution of Policy Behind Taiwan's Development Success', *Economic Development and Cultural Change* 38 (4), 1990, pp. 885-888; Hongwu Sam Ouyang, 'Agency problem, institutions, and technology policy: explaining Taiwan's semiconductor industry development', *Research Policy* 36, November 2006, pp. 1314-1328.

[124] Hsing, *Taiwan: Industrialization*, p. 152.

[125] Anthony James Gregor, Maria Hsia Chang and Andrew B. Zimmerman, *Ideology and Development: Sun Yat-sen and the Economic History of Taiwan*. Berkeley, CA: Center for Chinese Studies: China Research Monograph 23, 1981, pp. 49-54; Shirley W.Y. Kuo, Gustav Ranis and John C.H. Fei, *The*

generous US aid, resulted in production in both agriculture and industrial sectors growing by leaps and bounds. Samuel Ho characterized the American economic aid which was phased out in the 1960s as "the prime stabilizer in the economy" in the 1950s (when it formed nearly 40 percent of gross domestic capital formation).[126] Chih-Yai Yang, Jong-Rong Chen and Wen-Bin Chuang point out that Taiwan's government imposed import protection policy in the early 1950s for the purpose of saving foreign exchange. But as the balance-of-payments improved, import controls became a tool for protection.[127] This policy also impeded the expansion of exports. To resolve the contradiction, the government adopted another compensatory package of export incentives called "offsetting trade policy" or "incentive twist", as Robert Wade calls it, which facilitated the growth of simple processing industries and low entry barrier for small firms to enter the export market.[128] It was a 'trade bias' in the sense that Taiwan's export industries had strong net incentives to export, while the import competing industries had substantial net incentives to sell on the domestic market.

The important lesson to learn from Taiwan's experience is that, contrary to neoliberal claims, as Robert Wade asserts, trade policy was linked to a wider industrial policy. Taiwan's government took a "strategic view of trade".[129] Trade control was

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Taiwan Success Story: Rapid Growth with Improved Distribution in the Republic of China, 1952-1979. Boulder, CO: Westview Press, 1981, pp. 73-83.

[126] Ho, *Economic Development of Taiwan*, pp. 113-115.

[127] Chih-Yai Yang, Jong-Rong Chen and Wen-Bin Chuang, 'Technology and export decision', *Small Business Economics* 22 (5), 2004, p. 350.

[128] Tein-Chen Chou, 'The pattern and strategy of industrialization in Taiwan: specialization and offsetting policy', *Developing Economies* 23 (2), 1985, pp. 138-157; Robert Wade, 'Managing trade: Taiwan and South Korea as challenges to economics and political science', *Comparative Politics* 25(2), 1993, p. 148-149.

[129] Wade writes: "The rule for raw materials and intermediates is simple: if used for export production they pay little or no duty (via rebate or exemption). The rules for imports of machinery and equipment are more complex. Duty is not paid if the machinery and equipment in question is not yet domestically manufactured, is used in the 'sophisticated' industries in which Taiwan wants to expand its productive powers (iron and steel, electrical engineering, electronics, machinery, shipbuilding, chemicals,

particularly used "to raise revenue", "to expand technological and supply capacity within Taiwan", and "to reduce trade surpluses with the US and deficits with Japan and lower the economy's dependence on these two partners". Taiwan's skilful bureaucrats used "managed trade' strategy rather than wholesale free trade regime. Wade defines trade management, more narrowly, as "intervention steered by the government's vision of the appropriate industrial and trade profile of the economy and by feedback from results on the ground." Far from being liberal, Taiwan was 'interventionist'. Studies which claim that Taiwan established a liberal trade regime in 1969 are suspect; although Taiwan had much lower average effective protection (14 percent) for manufacturing than other countries (e.g. Colombia, 35 percent; Israel, 76 percent; and Argentina, 112 percent),[130] when dispersions were examined, substantial variations around the average were found, indicating that there was 'industry bias' as "some sub-sectors were being spurred on in different degrees."[131] In terms of tariffs as a protectionist instrument, Wade points out that between the mid 1960s and the mid 1970s, tariff rates increased despite booming exports, and legal rates reached more than 40 percent in the mid 1970s. It was only after the second oil price hike of 1979 that the government made a dramatic reduction in tariffs

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petrochemicals and one or two others), is used to produce certain specified products within the industries, or is used to produce these products according to certain scale, capacity, purity, or local content requirements…Machinery and equipment imports for production of nonspecified items (or specified items which fail to meet the additional requirements have to pay duty. If the machinery in question is domestically manufactured, imports may still be allowed, but the normal duty will have to be paid…The rules of tariff rebate, then, give more incentives to some industries and products than others, according to criteria derived from a wider industrial policy" (p. 151).

[130] T.H. Lee and Kuo-shu Liang, 'Taiwan', in Bela Balassa and Associates, *Development Strategies in Semi-Industrial Economies*. Baltimore, MD: The Johns Hopkins University Press, for the World Bank, 1982. See also Maurice Scott, 'Foreign Trade', in Walter Galenson (ed.), *Economic Growth and Structural Change in Taiwan: The Postwar Experience of the Republic of China*. Ithaca, NY: Cornell University Press, 1979.

[131] 'Low industry bias' or 'neutrality' means that "different industries and sectors receive about the same amount of spurring-on through protection, perhaps with a subset of infant industries receiving more than average protection but a uniform level within the subset"; 'low trade bias' or 'neutrality' means that "different industries and sectors receive about the same net incentives to sell at home or abroad" (Ibid., p. 149.

to pressure firms to upgrade their technological capability at a much quicker pace, and because of US pressure to reduce the trade imbalance. Still, average rates were as high as 31 percent in 1984, after the much touted liberalization regime.[132] Technology and high productivity combined with export promotion and import substitution were behind Taiwan's industrial success early on in the process. An "unexplained" output growth played a prominent role from 1953 to 1973, accounting for 44 percent of the total growth in GDP (Table 5-3). The robust export trade became more diversified consisting not only of simple manufactures but of fresh and canned farm products, textiles, plywood, resin and plastic products.[133] With a robust domestic economy and improved trade balance fuelled by expanding exports, foreign capital flowed into Taiwan. It was not the other way around, where foreign capital is depended upon to promote growth, a strategy that the Philippines adopted but which never succeeded in pushing the economy into rapid growth.

Table 5-3
Sources of output growth

	Total growth in GDP (%)	**Percentage of growth in GDP attributed to**		
		Labor	*Capital*	*Unexplained*
1953-72	**100**	**17.7**	**27.6**	**54.8**
1953-62	**100**	**15.2**	**19.8**	**65.0**
1963-73	**100**	**20.2**	**35.4**	**44.4**

Source: Ho (1978, p. 126)

In Taiwan, SMEs were the main industrial force of the economy and, as Jong-Tsong Chiang points out, these enterprises relied, initially, on commercial technology importation and imitation as the main strategies for development.[134] It appears, Arnold notes, that the "acquisition of foreign technology represented an effective policy choice by Taiwan's developmental bureaucrats."[135] Except in agriculture, very little scientific R&D was actually carried out, and local industries did not generally look to universities or public technological organizations for assistance. Initially, the private sector was not generally inclined to innovate on technologies bought from abroad, and there was no NSI to speak of, given that what they had at that time was an "industry-disconnected R&D community".[136] Hence, when Taiwan's government decided to strengthen domestic technological capabilities, Chiang notes, "it had to rely mostly on public applied R&D institutions first, and emphasize the interactions between these institutes and industry".[137] This situation of a 'fragmented system' of innovation and production was no different from the Philippines. What was different was that Taiwan had a developmental bureaucratic élite, which ensured that Taiwanese entrepreneurs were accorded the appropriate policy environment to ensure that institutions supportive of the growth of the industry were brought to line. Entrepreneurial and risk-taking are crucial in the process of developing an industrial economy because they possess the proclivity for technological innovation.[138] Innovators exercise judgment in the face of uncertainty and with intelligence to search for better ideas, are willing to take high risks and to invest for a long-term purpose of profit. Jacob states that "the science of mechanics in all its branches became central to generating industrially usable knowledge" and this application

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[132] Ibid., p. 150.
[133] Ibid., p. 158.

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[134] Jong-Tsong Chiang, 'Technology strategies in national context and national programs in Taiwan', *Technology in Society* 10, 1988, p. 188.
[135] Arnold, 'Science and technology development', p. 446.
[136] Chiang, 'Technology strategies', p. 188.
[137] Ibid., pp. 188-189.
[138] Freeman and Perez, 'Structural crises and adjustment', pp. 47-60.

"dramatically transformed human productivity in the West". From then on, Susan Sell asserts, technology in the modern world has become "a measure of power, prestige, wealth, and autonomy", and she claims that, for developing countries, technology holds the key to economic development.[139]

5.3 Summary

Nationalist aspirations, especially of previously colonized countries, dictated an intensified drive to diversify and industrialize in the 1950s and 1960s. Industrialization was viewed as the surest way to accelerate economic growth although the appropriate role of governments was a bone of contention among economists and policymakers alike. Nonetheless, the debate was not whether the state should be actively involved or not, but the division of responsibility between the state and business.[140] During this period developing countries used the IS strategy to encourage the establishment and expansion of domestic production sectors. Through 'infant industry' arguments, active support by governments through protectionist policies, such as subsidies and/or trade policies was implemented. IS strategy, however, had varied outcomes. While it worked in the UK, US, Japan, and Taiwan, it did not in some developing economies. The Philippines was one of them.

This chapter comparatively examined the IS strategies of the Philippines and Taiwan during the early postwar period. Contrary to the usual characterization of the Philippine state as 'weak' where a powerful business class extracts privilege from a weak bureaucracy, I suggested, as with Sidel, that the government is vested with enormous power which has the capability to shape the economy. There is persistence of coercive pressures and of both national and local power monopolies in electoral politics and social relations. Taiwanese and Filipino governments were both riddled with corruption, but both also had strong governments. On this account, the two governments did not differ from each other. Where the difference lies is in the differences of colonial legacies.

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[139] Susan Sell, *Power and Ideas: North-South Politics of Intellectual Property and Anti-trust*. Albany, NY: State University of New York Press, 1998, p. 42.
[140] Rokiah Alavi, *Industrialization in Malaysia: Import Substitution and Infant Industry Performance*. Florence, KY, US: Routledge, 1996; Reinert, *How Rich Countries*, p. 282.

Japanese colonialism generated a different dynamic than US colonialism. The modernization of Taiwan's political economy by the Japanese colonial government had successfully set the stage for what would be called their 'miraculously' rapid industrial development during the postwar period. Whether colonial Japan's policy to its colony was intended or not is subject to debate. Nonetheless, the creation of the social environment conducive for these economies' industrial development occurred over a long period of time through Japan's modernizing policies. On this account, Japan's colonial policy was a 'real' assimilation. Taiwan had a developmental bureaucracy, but the Philippines does not.

As a modern state steeped in nationalism, Taiwan's IS strategy was guided by a universe of assumptions, values, and expectations centered on production and technological innovation competency as the means of building up a strong national economy. The IS strategy of the Philippines led by nationalist Filipinos failed because it was not combined with policies that would build up the technological capability of its firms. That a technology- and innovation-based development strategy was not deciphered by the Filipino technocrats indicates a 'deficiency' in the Philippine education system ‘deformed’ by Spanish (Chapter 3) and American (Chapter 4) colonialism. The next chapter will look at the export-led period in the Philippines driven by foreign trade and investments.

Chapter 6 Back with a vengeance: 1986 and onwards

> Believe me, do not fear crooks or evil people, fear the honest person who is wrong. That person is in good faith, he wishes everyone well, and everyone has his confidence: but unfortunately his methods fail to get out the good in humans.
>
> ***Fernando Galiani, Italian economist (1770)***
>
> And whatever harm the evil may do, the harm done by the good is the most harmful harm.
>
> ***Friedrich Nietzsche (1885)***

Chapters 3 and 4 traced the roots of the dominance of global merchants and financiers in the Philippines which I argue is at the root of the inability of the country to establish NSI and, consequently, to industrialize. The Philippine political and intellectual leaders were incapable of intervening effectively to transform the economy during the IS interlude, even with strong indications that the landed and mercantile business interests in the Philippines could be shaped by a nationalist leadership (Chapter 5). The EP (export-promotion) strategy failed to launch the economy into rapid industrial development, and again the untransformed bureaucracy was the institutional drag. Rather, it entrenched the country's location in the international division of labour – as a supplier of cheap labour, whether as assemblers and packagers in what is supposedly a high-tech electronics industry, or as call center representatives for IT (information technology)-driven service industry. I argue that the 'lack of political will' is largely due not only to the dominance of global traders and financiers but, more significantly, of cosmopolitan Filipino technocrats, the nodal link of global forces in WB, IMF and Wall Street banks. It is their free market policy that favours the unrestricted movement of money which is preventing the build up of a broad-based local industry, and the transformation of the economy from mercantile to industrial. The corruption discourse has distracted, if not prevented, us from getting at the core of economic problems in the Philippines. Corrupt politicians are to blame, certainly, as are greedy traders and financiers. But it is the country's powerful economic managers' cosmopolitan outlook without nationalist roots that is responsible for the Philippines' remaining a country of salesmen and consumers rather than producers. That the country is exporting people rather than good is a failure of those technocrats. It is they that develop and implement flawed development plans, and 'disconnected' outcomes such as "bullish markets, empty pockets" should be taken as the result of faulty plans and strategies. Faulty plans are due to unrealistic and faulty worldviews.

In this chapter, through a case study of the electronics industry, I examine the EP development strategy and its outcomes, particularly a foreign-dominated high-tech industry that has primarily turned into an import-export business, lacking a robust local supplier industry (sub-section 6.1). Sub-section 6.2 discusses how economic liberalism has prevented industrial capitalism from flourishing in the Philippines. The not-so-secret-formula for accumulating national wealth has eluded the archipelago, not primarily because of the much-maligned oligarchs, or the local and national politicians, but because of the technocrats. The economic managers do not see the need to be economically independent even if they see dependency as the cause of the misery of the Filipino people. It is their blind faith in economic liberalism that made broad-based development through a technology-driven strategy a political rhetoric rather than a reality. Sub-section 7.3 pulls the discussion together.

6.1 More of the same – a high-tech import-export economy

The Philippine government identified electronics as a priority for development in the 1990s. Ironically, at that time the industry had been in the country for almost three decades. Deemed 'strategic', it was believed that it would support robust and sustained economic growth through the creation of new firms and/or the revitalization of old ones. The Philippine government pinned its hopes on this industry as the solution to the problems of economic stagnation and underdevelopment. Electronics exports currently account for about 70 percent of the country's total exports. This, however, is as much a hindrance as it is a help. It is an advantage in the sense that over the past three decades or so, the industry has moved into dynamic and technology-intensive products. As one key industry official said, the growth of Philippine industry has been "from coconut chips to microchips".[1] However, the Philippine economy is in a very precarious situation, and policymakers are very concerned about the country's export structure which is increasingly concentrated on electronics. That 'high-tech monoculture' exposes the nation to highly volatile global electronic market conditions, characterized by cyclical ups and downs.[2] The Philippines is facing stiff competition from its Asian neighbours.

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[1] An interview with Mr. Ernesto Santiago, Executive Director, Semiconductor and Electronics Industries of the Philippines, Inc (SEIPI), Manila, Philippines, June 8, 2005.

[2] Dieter Ernst, *The Global Race in Microelectronics: Innovation and Corporate Strategies in a Period of Crisis.* Frankfurt: Campus, 1983.

The highly competitive environment makes it imperative for the industry to move up the value-added chain in the international division of labour.[3] Over the long term, the Philippines can no longer rely on cheap labour to compete globally because of the entry of more cost-competitive locations such as China and Vietnam. In the 1990s, China's electronic exports grew at an average annual rate of 32 percent.[4] According to a SEIPI (Semiconductor and Electronics Industries of the Philippines, Inc.) study, high production costs due to relatively high labour and operating costs have reduced the attractiveness of the Philippines as a production site for electronics. The country has one of the highest labour costs in the Asian region.[5] The pressure to improve the industry's competitiveness has intensified in recent years. To survive, the industry needs to focus on creating a supplier or capital goods industry, on improving products, diversifying exports and markets, and on creating a strong internal domestic market. Moreover, value-addition in

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[3] WB-FIAS (World Bank and International Finance Corporation Foreign Investment Advisory Service), 'Fostering linkages between multinational and domestic firms in the Philippines', Paper presented during the conference Policies to Strengthen Productivity in the Philippines, June 27, 2005.

[4] Myrna S. Austria, 'Assessing the Competitiveness of the Philippine IT Industry', PIDS Discussion Paper, Makati, Philippine Institute for Development Studies, 1999.

[5] Businessworld, 'Energy dep't mulls open electricity access for electronics/semicon firms, October 13, 2004. A report by the US Department of Labor indicated that hourly compensation cost for all employees in manufacturing in the Philippines is US$ 1.36 compared to China's US$ 0.67, Korea's US$ 16.87, Taiwan's US$ 7.95, Singapore's US$ 13.55, and Japan's, US$ 24.40.. **Hourly compensation costs** include (1) hourly direct pay, and (2) employer social insurance expenditures and other labor taxes. **Hourly direct pay** includes all payments made directly to the workers, before payroll deductions of any kind, consisting of pay for time worked and other direct pay. **Social insurance expenditures** and other labor taxes include employer expenses for legally required insurance program, contractual and private benefit plans, and other labor taxes. Other labor taxes on payrolls or employment even if they do not finance programs that directly benefit workers because such taxes are regarded as labor cost. **All employees** include production workers as well as all others employed full- of part-time in an establishment during a specified payroll. Temporary employees are included. **Production workers** generally include the employees who are engaged in fabricating assembly and related activities; material handling, warehousing and shipping; maintenance and repair; janitorial and guard services; auxiliary production (e.g. power plants); and other services closely related to the above activities. Working supervisors are generally included, apprentices and other trainees are generally excluded. See Bureau of Labor Statistics, 'International comparisons of hourly compensation cost in manufacturing, 2006', United States Department of Labor, Washington, D.C. January 25, 2008. http://www.bls.gov/news.release/pdf/ichcc.pdf, Accessed April 6, 2008; Entrepreneur.com, 'Bureau of Labor Statistics includes Chinese worker compensation costs in international comparison', December 15, 2006, http://www.entrepreneur.com/tradejournals/article/156720979.html.

IT-enabled services, such as call centers, business process outsourcing (BPO), and medical transcription requires product development and design capabilities in telecommunications and computer devices. Investments in IT-enabled services in the Philippines have been rising, and current product services offered to local and international clients must be enhanced. Local components-supplier firms, especially SMEs, need to be developed to encourage foreign companies to establish their production operations in the country.

A second reason for the choice of the case study is that electronics manufacturing is archetypical of a globalized production system. Since the 1960s some segments of the production process have been dispersed to selected locations overseas in order to take advantage of certain combinations of production factors. The Philippines is one of those 'export platform' countries that have been systematically linked to the global structure of production. But, unlike other Asian countries which have successfully moved up the value-chain, the country has been kept in the cheap labour-intensive, low value-added segment of the international division of labour. Thus, some scholars argue that policymakers should resist the temptation to generalize about the relevance of a high technology-driven mode of industrialization. Unlike in South Korea, Taiwan, Singapore, and Hong Kong, the high tech industry's effect has by no means been clearly positive, especially in the Philippines and Indonesia. This argument raises an important point. It is true that linkage to the global production system has produced both successful and failed outcomes. However, it makes it even more necessary to understand why electronics have been harnessed effectively as part of a national development strategy in other countries, but not in the Philippines. Furthermore, the distinctive features of the electronics industry, particularly its ability to link national and global spaces, make it an appropriate industry to investigate. This is significant especially in regard to the analysis of innovation systems as historical structures. This study maintains that the global restructuring of production in the electronics sector demonstrates the interaction of material, ideational, and governance forces. It also shows the relevance of an analysis of political power as applied to technology and innovation in three interrelated spheres of interaction, i.e., at the production, national, and global levels. The situation in the electronics industry in the Philippines is analyzed against that of South Korea. Besides the latter country being a key player of the global electronics industry, the comparison made with the Philippines show some basic differences and similarities in development trajectories. Unlike the Philippines, South Korea was successful in developing its indigenous electronic industry through the 1980s. Both South Korea and the Philippines have been linked to the global production system as 'export-platforms' of multinational electronics companies. Nonetheless, South Korea succeeded in rapid industrialization and developed a dynamic local electronics industry, while the Philippines failed.

The advances in voice and data communication has given rise to an increase in outsourced service industries, such as call centres and other business processing services, in developing countries such as the Philippines and India, serving clients in far-away developed economies. Information services have become an ideal entry-level business because of the relatively lower initial investment and high profit margins, which allowed small firms to carve a niche. The convergence of computer and telecommunication industries to form the IT industries made the integration of functions such as data collection (e.g. weather forecasting, medical diagnosis), data input (e.g. word processing,

mail sorting), *data storage* (e.g. accounting archives, libraries), electronic data processing (e.g. scientific data computation, traffic control, inventory control), data output (e.g. word processing management/administration), and communications (e.g. teleconferencing, international financial transactions), a reality.

The emergence of the IT industry has increased the importance of software[6] in hardware designs to enable the application of microelectronics to industrial and service products and processes. This means that value-addition in the IT service industries is largely dependent on advances in the microelectronics industry, and vice versa. They are mutually reinforcing processes. Software allows machines or equipment to perform many functions without necessarily changing the machine itself. Therefore, software capabilities are critical in spreading the microelectronics technology applications in electronic devices. Hardware and software innovations in the IT industries have enabled the collection, analysis, retrieval and re-use of information to cover a wide range of activities. But much more than that, the information can be shared at great speed, over huge distances, by several orders of magnitude, in a very short time, thus lowering the cost per unit of processed information.[7] In the information processing industry there are three actors: the hardware manufacturers and the software manufacturers, which are both providers, and the end-users. But they are practically segmented largely as a result of the unbundling decision made by IBM in 1969 so that software has emerged as an independent sector.[8] New modes of software production and engineering, such as 'software packages' and new forms of subcontracting to develop specific application packages, have emerged as a separate industry. Nonetheless, Gregory Tassey argues that the "unbalanced perspective on future economic growth strategies" because of the tendency to "relegate manufacturing to a secondary role in economic growth strategies" and to put too much focus on IT-based services, especially by financial markets, is not good.[9] Tassey argues that "higher growth rates cannot be sustained by just riding the information highway...[because] industrial products (hardware and software) are essential components of IT-based infrastructure and IT-based services in general." Just as synergy between the agriculture and manufacturing industry supported rapid growth of 'the West' and some of 'the Rest' (20th-century 'Asian miracle'), Tassey maintains that a synergy between IT-based service and manufacturing industries is necessary for long-term growth in the 21st century.

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[6] Broadly, software is defined as the program that modifies computer hardware and extends its function beyond the general purpose digital computer. Software includes, but is not limited to. control programs, executive supervisors, teleprocessing and communications monitors, application programs, programming aides, and languages (Ernst 1983, p. 71).

[7] Luc Soete and Giovanni Dosi, *Technology and Employment in the Electronics Industry*. London; Dover N.H.: F. Pinter, 1983, p.10-11.

In the second half of 1969, the Philippine economy was once more plunged into an economic crisis. This was two decades after the foreign exchange crisis which led to the protectionist system that was implemented and subsequently discontinued in 1962 as a result of the relaxation of controls. The financial crisis had once again laid bare the country's vulnerability to IMF dictates as conditions for further loans. One month after winning a second term, President Marcos broke his election campaign promise and adopted a floating currency exchange rate regime wherein the value of the peso was allowed to fluctuate on the basis of supply and demand for dollars. By 1970, the country's foreign debt escalated to ₱6 billion (Philippine peso) because of the currency devaluation by more than 60 percent, and the country was caught in a debt trap. Older debts were paid for by fresh borrowings. The government relied on the abundant supply of cheap credits made available to developing countries by private banks. These loans were ostensibly to finance development projects; however, extensive corruption and failure to utilize the loans for their intended purpose, coupled with an inability to increase domestic productivity, put the Philippines in a serious debt situation.

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[8] This refers to IBM's decision in 1969 to separately price software and hardware, which was pivotal to the establishment of a separate software products industry. Scholars have suggested that the threat, and indeed the reality of an antitrust suit by the US government against IBM hastened the decision to unbundle software from hardware pricing. It should be noted, however, that even before this 1969 decision by IBM successful software products already existed.

[9] Gregory Tassey, 'Policy issues for R&D investment in a knowledge-based economy', *Journal of Technology Transfer* 29 (2), 2004, pp. 155-156.

Heavy indebtedness and widespread poverty in developing countries, combined with the difficult economic adjustments in advanced countries, created the 'global structural crisis' of the 1980s. Meanwhile, the oil crisis of the 1970s, the further liberalization of world trade, and the Japanese corporate challenge to the dominance of US firms in the global electronics industry put huge pressure on American firms to globalize production. After the 'oil shocks', the world economy was more volatile. The old mass-production model designed for a predictable world of Keynesian economic management with expanding consumer demand and spreading affluence was severely strained, unable to deliver its promised productivity in the advanced economies. One of the strategies adopted was increased access to less expensive overseas labour for the labour-intensive assembly and packaging operations. Marcos' technocrats, together with the IMF-WB, designed an export promotion industrial development strategy with its political and legal framework laid out in the Export Incentives Act of 1970. This policy shift, according to Romeo Bautista and Gwendolyn Tecson, signalled "a more outward-looking industrial development strategy."[10] With technical and financial assistance from the World Bank, "a program of industrial structural adjustment was launched" as "policy-makers were acutely aware that the country needed to improve the international competitiveness of its domestic industry."[11] But Alejandro Lichauco notes: "Marcos actually resisted certain IMF impositions notwithstanding commitments made to that institution [the IMF] by Virata."[12] (Cesar E.A. Virata was Marcos's Minister of Finance and was also concurrently the first and only Prime Minister under the parliamentary form of government of an authoritarian Philippines).

In 1983 Marcos introduced comprehensive controls on foreign exchange and selective controls on imports of agricultural products, fruit, certain industrial goods and luxuries; the selective import controls became a bone of contention between Marcos, on the one hand, and the IMF-WB-Virata team on the other.[13] The rift between Marcos and the group of Virata and the IMF-WB indicates that, what Robert Cox calls the internationalization and fragmentation of the nation-state, was already happening in the Philippines. The internationalization of the Philippine state made the Ministry of Finance, which Virata headed at that time, a nodal point in the adjustment of domestic to international economic policy. With the economy further deteriorating and society descending into chaos, the Marcos regime had limited options.[14] In an effort to create a cost-competitive environment to attract more investments into the country, the government offered special incentive packages to TNCs. The incentives allowed foreign firms 100 percent ownership of their subsidiary, duty- and tax-free production, no restriction on the repatriation of profits, and access to the local finance system for credit. Thus, while the first 'chip crisis' in 1974 and 1975 had slowed the run among US firms into new offshore production, US semiconductor firms had begun to invest in the Philippines. In the early 1970s to the 1980s, investments in electronics were a trickle, despite the generous incentives offered by the government (Figure 6-1).

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[10] Romeo Bautista and Gwendolyn Tecson, 'International Dimensions', in Arsenio Balisacan and Hal Hill (eds.) *The Philippine Economy: Development, Policies, and Challenges.* New York: Oxford University Press, 2003, p. 138.

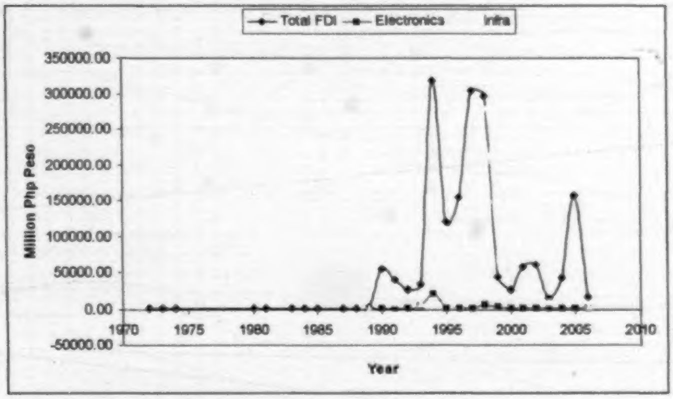
[11] Ibid., p. 140.

[12] Ibid., p. 71.

[13] Ibid., p. 70-71.

[14] Chalk (2001) shows that the Philippines and Indonesia offered the most generous and wide-ranging fiscal incentives to foreign investors, compensating for the less attractive overall business climate in these countries. These incentives have proven to be costly for the Philippines in terms of lost revenue. There are broadly four categories of incentives currently available to investors in the Philippines. These are incentives included in the OIA (Omnibus Investment Act), in the Export Development Act (for exporting companies),

Fig. 6-1
Total FDI and investments in electronics industry



Source: Board of Investments

Political instability was a major factor; in June 1982, Marcos banned strikes in the electronics industry. Political repression was seen by the ruling élites as the only option to stop the growing unrest, particularly the bitter confrontations between labour groups and foreign companies. However, this strategy was unsuccessful because TNCs are not

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incentives for companies locating in Special Economic Zones (SEZ), and other ad hoc concessions to various industries such as steel, shipping, mining, agriculture, etc.

attracted by politically unstable countries.[15] Popular mobilizations, élite disaffection and loss of military support removed Marcos from power in 1986. The change of regime unleashed a number of economic reforms, beginning with the dismantling of government-sponsored monopolies, especially in the sugar and coconut sectors. The new Aquino government accelerated the import liberalization process, abolished export taxes (except on logs), and the reforms culminated in foreign exchange liberalization. Romeo Bautista and Gwendolyn Tecson note:

> About half of the 951 import items liberalized in 1986 were manufactured goods (such as textiles, leather, rubber, and paper products). Quantitative restrictions on 170 products were removed in 1987, and on another 209 products in 1988. The remaining 673 restricted import items were classified into three lists. Those under list A were scheduled for immediate liberalization, and 94 of them were liberalized by year-end 1989; those under list B were scheduled for further review; and those under list C, numbering 114 items, continued to be restricted for national security or health reasons.[16]

Foreign incentive packages were streamlined and expanded in the 1987 Omnibus Investment Code (Executive Order 226) where income tax holidays, tax and duty free importation of capital equipment, simplified customs procedures, and access to bonded warehouses were added as investment perks. However, foreign firms continued to prefer to invest in other Asian economies, and those already in the Philippines adopted a wait-and-see attitude. Although appreciation of the Japanese yen produced a wave of investments in Asia from 1985, the Philippines was still not a preferred investment location. During this period the country experienced enormous political and economic instabilities. It was not until the 1990s when President Fidel V. Ramos assumed the presidency that growth in total foreign investments began, the biggest share being in infrastructure and utilities. With an improved political situation came a stable flow of FDI (foreign direct investment)[17] in the electronics sector, and this resulted in a steady rise in export earnings derived from electronic products, from US$ 1.1 billion to US$ 24.2 billion between 1985 and 2004 – a 24-fold increase over almost two decades (Figure 6-2).

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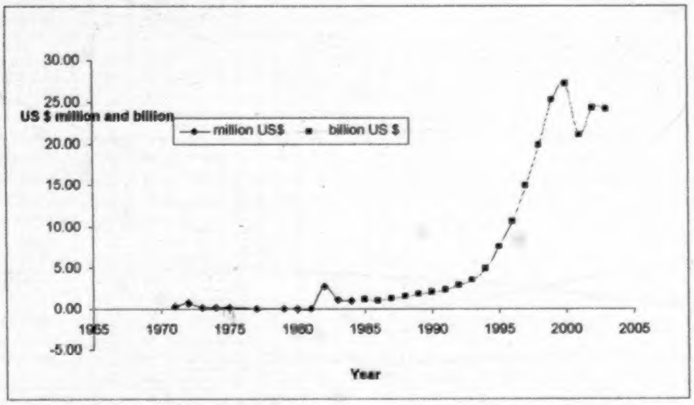
[15] See, for example, Philipp Harms and Heinrich Ursprung, 'Do civil and political repression really boost foreign direct investments?', *Economic Inquiry* 40 (4), 2002 (October), pp. 651-63; Syed H. Akhter, 'FDI in developing countries: the openness hypothesis and policy implications', *The International Trade Journal* 7 (6), 1993 (Winter), pp. 655-672.

[16] Bautista and Tecson, 'International Dimensions', p. 141.

Fig. 6-2
Growth of electronics industry



Source: National Statistics Office

Foreign investments in the Philippines, however, represented a meagre 8 percent of total foreign investments in the ASEAN region. Singapore and Malaysia were the most favoured destinations for foreign investors, averaging 33 percent and 16 percent, respectively, between 1987 and 1997.[18] At this time, most investment in the electronics industry in the Philippines was Japanese, were heavily concentrated in HDD (hard disk drive) manufacture. Unlike other Japanese electronic firms, companies in the HDD sector did not participate in offshore production in the 1980s.[19] The new round of yen appreciation in the mid 1990s, the intensified competition in the HDD global market, and the drive to become a big player in the world market forced major Japanese HDD players for the first time, to expand their manufacturing facilities outside of Japan.[20] Japanese investors, both assemblers and component suppliers, were drawn to the Philippines, thus a concentration of HDD investments in the country and a local supply network for the sub-sector were secured.

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[17] 'FDI' is defined as long-term investment by a foreign investor in a business enterprise located in a host country. In order to qualify as a foreign direct investor the parent enterprise must own at least 10 percent of the ordinary shares or voting power of the subsidiary firm.
[18] Xiaoquin Fan and Paul M. Dickie, 'The contribution of FDI to growth and stability: a post crisis ASEAN-5 review', *ASEAN Economic Bulletin* 17 (3), 2000, December, pp. 312-323.

Like most Asian players, the Philippines increased its production capacity for high-tech products (Table 6-1) and their share in the country's total exports grew consistently from about 12 percent (a little more than one-tenth) in 1990 to 67 percent (or more than three-fifths) in 2003. Thus, the Philippine export sector was largely concentrated in one industry, and particularly in one commodity, making the economy highly vulnerable to major global market contractions. Malaysia and China also rapidly expanded their high-tech sector, but unlike the Philippines, they had more diverse export products, and growing resource-based as well as low and medium technology-based exports. Still the growth pattern of the Philippine electronics industry appeared positive for a country moving into technology-intensive export production. However, production capacity in terms of aggregate export value does not really indicate the strength or competitiveness of an industry. Unlike other Asian economies, the Philippines' local industry is heavily dependent on imported raw materials and components. For example, net export values obtained from high-tech goods ranged from a low of 4 percent (e.g. automatic data process machinery) to a high of 47 percent (e.g. IC or integrated circuit and micro-assemblies) compared to the 100 percent net revenues from low-technology (e.g. clothing and apparel) and agriculture-based manufactures (e.g. copra).[21]

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[19] In her study, Tecson (1999, p. 3) mentions that there was not one Japanese investment in the HDD sector in Singapore in the 1980s. American multinationals dominated the industry in Singapore. In Malaysia, only one Japanese firm, Hitachi Metals, which produced magnetic heads, was established in 1989, and it was only Fujitsu that invested in HDD production in Thailand in 1988.

[20] See Keiko Morisawa, 'The Philippine electronics industry and local suppliers: developing supporting industries through foreign capital-led industrialization', University of the Philippines School of Economics Discussion Paper No. 001, 2000, 23 pp.

Table 6-1
Exports of Asian economies in comparison, 1990 & 2003 (US$ million)

	Philippines		*China*		*Malaysia*		*Taiwan*	
	1990	2003	1990	2003	1990	2003	1990	2003
Total Exports	**5,583.6**	**36,197.6**	**60,805.5**	**435,762.8**	**29,302.3**	**103,646.9**	**66,837.5**	**130,077.4**
All manufactures	4,455.1	34,592.1	48,043.4	411,615.7	21,771.7	91,801.8	63,979.1	126,802.4
	Technological Breakdown of Manufactured Exports							
Resource-based	**1,674.8**	**2,542.4**	**6,849.7**	**35,102.4**	**6,934.3**	**15,129.9**	**4,403.8**	**6,801.0**
Agro-based	1,108.2	1,538.1	2,895.9	14,398.7	6,106.5	11,332.2	2,540.2	2,436.4
Mineral-based	566.6	1,004.3	3,953.7	20,703.7	827.8	3,797.7	1,863.5	4,364.6
Low Tech	**1,499.8**	**3,737.1**	**24,934.0**	**154,452.9**	**3,221.0**	**8,993.5**	**26,449.4**	**29,246.9**
Fashion Cluster	900.0	2,695.5	18,318.2	93,960.0	1,721.8	3,068.9	13,163.4	10,881.5
Other Low Tech	599.8	1.041.6	6,615.7	60,492.9	1,499.2	5,924.5	13,286.1	18,365.4
Medium Tech	**638.3**	**4,009.7**	**13,990.9**	**107,824.1**	**4,897.3**	**20,467.7**	**20,005.2**	**39,915.9**
Automotive	28.5	1,245.1	3,762.5	7,837.7	215.2	600.8	2,439.8	4,085.3
Process	292.1	422.7	3,307.0	21,404.9	659.5	5,545.4	5,137.6	12,444.6
Engineering	317.6	2,342.0	6,921.4	78,581.5	4,022.7	14,321.4	12,427.9	23,386.0
High Tech	**642.2**	**24,302.8**	**2,268.8**	**114,236.3**	**6,719.1**	**47,210.7**	**13,120.7**	**50,838.6**
Electronics	629.0	23,623.3	1,043.7	100,985.2	6,164.8	44,572.9	11,929.3	46,602.6
Other High Tech	13.2	679.6	1,225.1	13,251.1	554.3	2,637.8	1,191.4	4,236.0

Source: FIAS (2005, p. 5)

That the Philippine electronic exports have a high content of imported materials indicates a lack of backward linkages in the industry. Local content is low, as is local value-added. In fact, the NSF (National Science Foundation) points out that between 1990 and 2002, the average growth in value-added for high-tech products in the Philippines stood at only 9.2 percent compared to Malaysia's 20.7 percent, and South

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[21] Sunil Mani, 'Moving up or going back the value chain: An examination of the role of government with respect to promoting technological development in the Philippines', UNU-INTECH Discussion Paper Series, Maastricht, The Netherlands, 2002.

Korea's 16.8 percent.[22] As of 2004 there were 860 electronics firms in the Philippines, the majority (72 percent) foreign-owned. Only 28 percent were owned by local capitalists. Japanese companies are now the leading foreign investors in the industry, accounting for 30 percent, followed by the South Koreans at 10 percent, and the US with 9 percent. The rest are from Europe, Taiwan, Singapore, and Malaysia.[23] Overall, the major investors in the country are Asian TNCs, so much so that Asian markets, particularly Japan and China, have become the major destinations for electronic exports from the Philippines. In 2004, about two-thirds of the country's electronic products went to Asian markets. Japan bought 20 percent, up by 4 percent of its procurement in 2003, 8 percent went to China, and 38 percent was shared by other Asian economies. The remaining third went to European and US markets.[24] These global firms sometimes sub-contract the assembly, testing, and packaging processes to contract manufacturers, which are mostly Filipino companies, but also include multinationals. They compete in the global market for assembly, testing, and packaging of semiconductors. There are a handful of local component suppliers, mostly multinationals. Very few Filipino companies have the capability to supply multinational assemblers located in the Philippines and globally with high-quality component parts and services. The local industry's participation in the global value-added chain is primarily in semiconductor assembly, packaging and testing of such products as ICs, microprocessors, DSPs, transistors, diodes, resistors, capacitors, coils, printed circuit boards (PCBs), lead frames and transformers. There is minimal involvement in semiconductor design and engineering services and in the manufacture of computers and peripherals (Table 6-2). Microchip assembly provides 71 percent of local industry revenues, followed by computers and peripherals with 17.5 percent.[25]

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[22] National Science Foundation (2004) as cited in World Bank and International Finance Corporation Foreign Investment Advisory Service (FIAS), 'Fostering linkages', p. 5.
[23] SEIPI (Semiconductor and Electronics Industries of the Philippines, Inc.), PowerPoint presentation by the Executive Director, 2005.
[24] Ibid.

Table 6-2
The Philippines in the electronics value chain

Product	*Value* *(US$ bn)*	*% Global Value-Added*	*Philippine Participation*
Production Equipment	30.0	7.0	None
Semiconductors	147.0	35.0	Mainly in Assembly, Packaging & Testing
Passive Components	23.0	5.5	Minimal
Printed Circuit Board	31.0	7.5	Minimal
Displays	46.0	11.0	Minimal
Connectors/Cables	25.5	6.0	Minimal
Batteries	45.0	11.0	None
Enclosures	30.0	7.0	Yes
Assembly Services	26.5	6.5	Yes
Other Services such as Design Services	14.0	3.5	Minimal
Total	**418.0**	**100.0**	

Source: FIAS (2005, p. 28)

However, only a few local Filipino companies have managed to link themselves into the global production chain. Most remain excluded because of lack of technological, managerial, and financial capabilities. These were the main constraints identified during the interviews with multinational corporate executives. The manufacture of key electronic component products, such as picture tubes, compressors, HDD, magnetic heads, media and spindle motors, and so on, requires precise and sophisticated engineering, and more expensive equipment. Although there is an expanding demand for these products by multinational assemblers, local suppliers are unable to meet the stringent quality, costs, and just-in-time delivery requirements because of lack of sophisticated technological, engineering production process, and financial capabilities.

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[25] Ibid.

The local Filipino suppliers are capable only of producing simple plastic and metal parts, packaging, wiring harnesses, electro plating, and gaskets. Because their market is basically local (does not include multinationals), the demand for their products is low. This forces them to produce a variety of low quality commercial products, such as plastic plates and chairs alongside the simple component parts for home appliances and automobiles in order to survive in the business. Meanwhile, global assemblers continue to import component parts, such as picture tubes, deflection yokes, tuners, fly back transformers for home appliances, MR heads, media and spindle motors for HDD, from their other Asian affiliates. Because the manufacture of components for semiconductors and information electronic products, such as computers and peripherals, requires a higher level of technology than home appliance production, it is not surprising that most components are imported. The TNC executives interviewed indicated that if local Filipino suppliers were able to produce globally competitive component products in the required quantities, multinationals would prefer to buy locally because the costs tend to be lower than for imported products. Moreover, geographical proximity is a huge advantage for local suppliers, especially in lean production systems where low inventories and flexibility in production scheduling are central to the whole process. Product designers need to work closely with suppliers to make sure that technical specifications and high quality standards for products are exactly met, and problems that emerge at any point in the process can be immediately addressed.

The competitive advantage of the Philippines based on low labour costs is rapidly eroding, and the prospects for a growing domestic market are remote. Multinationals are footloose, and competition from China and other cost-competitive locations in Asia poses a serious threat to the viability of the local industry. In fact, in 2002 Toshiba pulled out its PC manufacturing plant and moved to Hangzhou, China. Another Japanese firm, NEC Corporation, shut down its HDD manufacturing plant and transferred to Shanghai. This rendered about 1,400 Filipino workers jobless. Recently, Intel is considering pulling out its US$ 1.51 billion investments in of the Philippines "because the cost of electricity is far too high."[26] Industry and government leaders readily admit that keeping the multinationals in the country and linking the majority of local Filipino SMEs to the global production network are major challenges. The decline of investments in the industry in recent years caused much concern because it is believed that this is "due more to problems that plague the country rather than by the cyclical bust and boom, which the global electronics industry normally experiences".[27] The usual perks of income tax holidays, cheap labour, and the like, can no longer be relied upon to deliver results with many more cost-competitive countries joining the global economy. Multinationals wanted to see dynamic and globally-competitive supplier and ancillary industries, composed of foreign and local companies, developed in the country. The absence of a supplier industry has continued since the import-substitution period.[28] The export-led strategy did not solve this problem. Clearly, trade policy is insufficient when the building-up of highly innovative and competitive industry is the goal.

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[26] Nick Farrell, 'Intel ponders Philippine retreat', Philippine Daily Inquirer, April 4, 2008, http://www.theinquirer.net/gb/inquirer/news/2008/04/04/intel-mulls-philippines-retreat, Accessed April 7, 2008.

[27] Maricel E. Estavillo, '3-year decline in electronics investment alarms industry group', Philippine Daily Inquirer, October 2004, http://itmatters.com.ph/news/news_10072004a.html, accessed 10 October 2004.

[28] Kunio Yoshihara, *Philippine Industrialization: Foreign and Domestic Capital*. Singapore and Quezon City: Oxford University Press and Ateneo de Manila University Press, 1985, p. 30-31.

6.2 Non-modern states and economic liberalism

The Western understanding of a modern state, whether from a 'developmental state' tradition or structural historical materialist tradition, emphasizes the importance of the 'autonomy' (not just relative) or the "insulation of the bureaucracy" in order to "reproduce capitalist society as a whole". What this means is that the state maintains a degree of autonomy in two respects, in 'unreal' and 'real' terms. The modern state appears to be a class-neutral institution, although it ultimately serves those who dominate the mode of production that it helps to reproduce.[29] The economic and class contradictions created by private property in a capitalist society theoretically require the state to intervene and resolve, otherwise there would be violent resistance of the exploited classes.[30] The structuralist view also suggests that the state's capacity to be autonomous is real in the sense that it is able "to develop its own self-interest distinct from those of the ruling class and of society as a whole. The functionaries of the state act to reproduce the existing social mode of production because their continued power rests on the maintenance of political and economic order".[31] These functionaries will often act with greater insight than the individual capitalist might, to support the long-term interests of capital. This task could not be accomplished by the state if it merely served as a tool of one capitalist group.[32]

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[29] Nicos Poulantzas, *Political Power and Social Classes*, Transl. T O' Hagan. London: NLB and Sheed and Ward, 1973, pp. 44-45

[30] Amy Beth Bridges, 'Nicos Poulantzas and the Marxist theory of the state', *Politics and Society* 4 (2), 1974, pp. 163-164.

[31] Fred Block, 'The ruling class does not rule: notes on the Marxist theory of the state', *Socialist Revolution*, 1977, pp. 10, 11,13,15.

[32] Poulantzas, *Political Power*, p. 20, 21.

Despite the obvious strength of structural analysis, its one weakness is the limited ability to explain structural change. Although Nicos Poulantzas develops further the idea that the political apparatus commands a power of its own and pursues its own interest, the economic determinist tendency of the structuralist approach is evident. The state is ultimately constrained by the need to act in the general interests of the dominant economic class. In this situation, the role of consciousness "less bounded by objective material conditions" across the various classes in society, is precluded. Moreover, the possibility of a genuine revolution from above, or as Theda Skocpol points out, "that state organizations might under certain circumstances act *against* the long-run economic interests of a dominant class, or act to create a new mode of production", is excluded.[33] Hannes Lacher points out that in a modern society, the institutional separation between the polity and economy in capitalist accumulation is crucial because the power to extract surplus is premised on the control over property in the means of production located in the market rather than the possession of political authority. It is the former which is "the decisive aspect in the dynamic of productive and commercial development."[34] The state is no longer directly implicated because the privatization of surplus extraction leaves the role of the state in the public domain to be the formulation and enforcement of rules for a market economy to function.

Germaine Hoston points out that "Marx's and Hegel's depiction of the Orient as a world now bypassed by history" and that "its only hope lay in the expansion of Western capitalism through imperialism", caused East Asian Marxists, especially Japanese and

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[33] Theda Skocpol, 'A critical review of Barrington Moore's social origins of dictatorship and democracy', *Politics and Society* 4 (1), 1973, p. 18.
[34] Hannes Lacher, *Beyond Globalization: Capitalism, Territoriality and the International Relations of Modernity*. London and New York: Routledge, 2006, p. 37.

Chines, to "devote considerable intellectual and emotional resources" to understanding the Asiatic mode of production and the state in Oriental society. That, Hoston points out, "pose[d] major issues concerning nationality and identity" for the Chinese and Japanese activist thinkers drawn to Marxism. For these thinkers, "the nature and role of the state in Marx's assessment of the East played a decisive role in defining these issues." Hoston argues that "the historical relationship between thought and politics is clear and striking."[35] This has significant implications in the context of economic development in the Philippines, where the appropriate role of the state in that process has largely been dominated by the global historic bloc. The IS period in the Philippines demonstrated that a nationalist historic political and intellectual leadership is capable of shaping the economy (Chapter 5). At that point, the state had the power to act not only on behalf of the bourgeoisie but at its own behest. In that sense, the Philippine state shares some similarities with the strong states of South Korea and Taiwan. The question, then, is why in the Philippines, unlike South Korea (and Taiwan), has the state failed to promote rapid economic growth in both the IS and EP industrialization periods?

I argue that at the core of the Philippine development puzzle is a technocracy that disregards the central role of technological innovation in economic change and development. The fact that the nationalist historic bloc has relied primarily on trade and monetary policy to bolster industrial development tells us that the defect lies in the predominant economic thought of US-trained Filipino economists. It is the dominance of neoclassical economic thinking among powerful bureaucratic élites and intellectuals which explains why there is a lack of political will to establish NSI and develop a technology-driven production sector. Faith in neoclassical economics and laissez faire orthodoxy kept them from appreciating List's and Schumpeter's idea that in capitalist economies it is technology and innovation, rather than pure price competition and a government's 'visible' rather than 'invisible' hand, that are central to economic change and development.

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[35] Germaine A. Hoston, 'The state, modernity, and the fate of liberalism in prewar Japan', *The Journal of Asian Studies* 51 (2), 1992, p. 288.

A study of this kind which focuses on the role of intellectual élites may have little utility for those who wish to understand the dynamics of mass-based 'revolutionary' politics. However, a major premise of this present study is that intellectuals have a great role to play, exemplified by what Rizal did to unite the Filipino peoples in the late 19th century. Belief-systems are a significant force shaping diverse political, economic and development (or underdevelopment) outcomes. In Gramsci's view, the material world is actively transformed collectively by men and women on the basis of their shared interests and consciousness.[36] They form their own perceptions of what their problems are and how to solve them. Thus, for Althusser, like Gramsci, ideology was a relationship that individuals experience: It is a "unity to the real relations and the imaginary relation between [individuals] and the real conditions of existence."[37] The consciousness essential to social change does not only come from the material base, but from other associated elements of civil society – the ideological state apparatuses, such as schools, churches, and trade unions. In the Philippines the education system has been a potent source for socializing the Filipino élite towards economic cosmopolitanism. Consequently, establishing a social environment that fosters creativity and innovativeness to build a local industry populated by SMEs owned by Filipinos has proven very difficult.

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[36] Antonio Gramsci, *Selections from the Prison Notebooks of Antonio Gramsci*, Ed. and transl. Quintin Hoare and Geoffrey Nowell Smith. New York: International Publishers, 1971. Humans have the capacity for cognitive construction. As they interact with the environment to solve their problems, their notions of needs or problems are developed and internalized through interactive processes or social interdependencies.

[37] Althusser, 'For Marx', cited in Hoston, *The State, Identity, and the National Question,* p. 78.

The Spanish and American colonial governments institutionalized economic liberalism in the Philippines, here understood as the fusion of classical economics and the 'Austrian school of thought'. The 'Austrian school of thought' championed laissez-faire, and its distinction lies in its aversion for government intervention in the market, which it regards as destructive. In the 1950s and 1960s neo-classical economists formally articulated Adam Smith's 'invisible hand' and David Ricardo's comparative advantage in abstract models that not only marginalized the idea of technological change as the driver of economic growth, but repudiated the necessary role of a modern state to transform the economy from a traditionally mercantile to an industrial path. Neoclassical economists regard "technology as a free good, growing at a constant or exponential rate."[38]

When these two schools of thought were combined, a development strategy that only relied on the market to build its technological capabilities, which was strongly held by the powerful economic managers of the Philippines, was the inevitable outcome. This presented the biggest hurdle for economic development in the Philippines. Whether to open or protect the economy or to tinker with the Philippine Constitution, which Professor Sicat tirelessly argued for "to get foreign capital to contribute more to our national progress", is not the answer to the economic woes of the country. The change must start from embracing a different perspective – a way of seeing things.[39] Filipino technocrats looking through neoliberal lenses saw the world differently, but, as in the English cliché, the proof of the pudding is in the eating. The Filipinos' stubborn adherence to economic liberalism resulted in a failed industrialization project, while their progressive neighbours' 'managed economies' and 'strong production orientation' led to economic success and improved living conditions for their citizens.

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[38] Fagerberg, 'A technology gap approach', p. 87.

[39] Gerardo Sicat, 'Philippine economic nationalism', Discussion Paper No. 0201, University of the Philippines-School of Economics, January 2002, p. 3.

Economic liberalism has held strong sway in Philippine policymaking. The power exercised by economists in Philippine policymaking spans centuries, which began with Gregorio Sancianco y Goson (1852-1871), the first Filipino economist and *ilustrado* educated in Madrid. Sancianco's *Progreso*, according to de Dios, "was unanimously hailed by contemporaries as a contribution to the cause of liberal reforms in the country" (such as the abolition of *cedula* and its replacement by the property tax), and was "imbued with Smithian ideas by way of Spanish radical liberal reformers."[40] Spanish liberalism, de Dios adds, was the source of economic ideas from which the Malolos Constitution and the issuances of Congress during the Philippine Revolution drew, and its "analytical apparatus had not progressed far beyond a strong inspiration from Adam Smith." Socialist ideas, such as Marxism, which was critical of laissez faire policies, did not play any role in Philippine economic thought during this time. One reason, maybe, as de Dios points out, is distance: "It is not implausible that the gap of a century separated the Philippines from the leading minds in economic analysis of the time."[41] I argue, however, that the socialization of Filipino technocrats to economic liberalism through their American education proved a very effective tool to put the Philippines under US control, as discussed later.

As part of the recommendations of the Schurman Commission *Report*, at the turn of the 20th century, the best and brightest among the Filipinos were sent to the US for education and training: “It is our opinion that there is no other object on which liberal expenditure could be made with such certainty of good returns.”[42] In 1903, under the *Pensionado* Program a scholarship was launched, and this was to be “the largest US study program for Filipinos before the Fulbright exchanges were established in 1948.” There were 100 young students from all over the country, between the ages of 16 and 21, who left for the US as *pensionados* in 1903. Upon their return to the Philippines, these *pensionados* were to become the corps of Filipino bureaucrats who were to assume increasing responsibility in managing the affairs of the country. The *Pensionado* Program provided opportunity for social mobility among those in the middle class as “candidates were selected on the basis of individual merit” and competition. On the argument that these were the “pressing development needs in the Philippines at that time”, most education training awards were in such “fields as teacher education, maritime studies, weather forecasting, fisheries, and coastal and geodetic engineering.” Training in mechanical and electrical engineering degrees, which at that time were at the forefront of leading edge technology and strategic industry in the US, was of less priority in the education of the *pensionados*. In 1930, the first Filipino to complete a PhD in economics from Columbia University under the supervision of Wesley Clair Mitchell, J.M.Clark, and E. Seligman was Andres V. Castillo. Castillo would serve as governor of the Central Bank, succeeding Miguel Cuaderno. Five years later, another Filipino, Horacio Lava, Sr., completed his PhD in economics at Stanford University. Lava held several positions as research director of the Central Bank, university lecturer, and dean of a university. Lava would “form part of the Left-nationalist tradition in Filipino economics, and he used his position in the Central Bank "to influence his superiors to effect a more nationalist monetary policy."[43] However, Lava was not able to stay long in his central bank post. Castillo and Lava, de Dios notes, would serve as pioneers of diverging schools of thought in the Philippines: Lava with the left-nationalist economics and Castillo with mainstream economics. In the 1950s, a significant number of Filipinos pursued graduate degrees in economics "almost exclusively in the US and a good number from Harvard", according to de Dios.[44] These economists would constitute the core of what he refers to as "the new guard", schooled in neoclassical economics orthodoxy: "those streams in economic theory that are founded on methodological individualism and the assumption of rational (optimising) behaviour as the basis for explaining smaller or larger phenomena."[45]

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[40] Emmanuel de Dios, 'From Sancianco to Encarnacion: footnotes to a genealogy of economics in the Philippines', *Philippine Review of Economics* 37 (2), December 2000, pp. 27, 28.
[41] Ibid.

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[42] The Schurman Report quoted in Alexander A. Calata, ‘The role of education in Americanizing Filipinos’, Hazel M. McFerson (ed.) *Mixed Blessing: Impact of the American Colonial on Politics and Society in the Philippines*. Westport, CT: Greenwood Press, 2002, p.91.

The group of Filipinos educated in the US would later form a "loose group" called the SEA (Social Economy Association) in the Philippines which included other scientists. However, the "economist core of this association", according to de Dios, strengthened its link with Columbia University through a joint research project, *Joint International Business Ventures*, part of some pioneering work on foreign direct investment.[46] Later in 1960, the economists in SEA "sought an even clearer differentiation of their profession and felt that a critical mass was present for an organisation restricted to economists". Forming an élite or exclusive group of economists committed to the "greater use of mathematical models and the demand for empirical testing through the emergent econometrics", the economists of SEA established the PES (Philippine Economic Society) in 1961.[47] It was the belief that an objective analytical tool was at their disposal to claim 'pure' or 'unbiased' analysis of economic development problems in the Philippines that made them 'separate' from others. As de Dios notes: "More than anything else, perhaps, this increasing differentiation in methodology was the single important factor that would distinguish the newly minted postwar economists from their academic predecessors, as well as from the commercial and political 'men of affairs' who had approached economics from a purely pragmatic angle." However, the seduction of formal theorizing and neglect of appreciative theorizing by neoclassical economists, according to Richard Nelson and Sidney Winter, has become a limitation for the discipline when coping with many important real world phenomena.[48] By contrast, appreciative theories are said "to be closer to empirical work, to which it is assumed to provide both guidance and interpretation."[49] Formal theories are logical and mathematical and are obsessed with equilibrium. This, however, renders formal models less useful in explaining a dynamic economy where change becomes the norm. Competition in the global market and ensuring to win it does not involve price alone, but the capacity to develop and introduce into the economy new products and processes

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[43] Ibid.

[44] Prof. de Dios notes: "The first postwar batch who returned with advanced degrees from the Ivy League were Amado Castro (PhD 1953) and Benito Legarda, Jr. (PhD 1955), both from Harvard. Somewhat later would come Jose Encarnacion (PhD 1960, Princeton), Placido Mapa, Jr. (PhD 1961, Harvard), Gerardo Sicat (PhD 1963, MIT). Bernardo Villegas also completed a PhD from Harvard in 1963 but returned to the country somewhat later. Together with Jesus Estanislao, Villegas would be pivotal in the establishment of an economic programme at the Center for Research and Communication (later the University of Asia and the Pacific). The first woman to obtain a PhD in economics would not come till 1967: Edita Abella Tan (PhD 1967, UC Berkeley). Many others who became notable practitioners completed master's degrees in economics (e.g. Quirico Camus, Sixto K. Roxas and Armand Fabella) from this period or, like Jaime Laya and Manuel Alba, finished advanced degrees in finance."(p. 42).

[45] Ibid., p. 41

[46] The result of this project "contributed to the discussion of impending nationality requirements in foreign investments under the Garcia administration, which ultimately led to the 60-percent Filipino rule." The position of the SEA economists favoured "joint ventures on a voluntary basis but opposed nationality requirements (Ibid., p. 43).

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[47] Sicat recalls that "there was a very active policy of restricting members because there had been a strange feeling among the educated economists who had returned that the Society, in order to thrive, should not be so open as to include everyone who thought himself to be an economist."(1974, p.7).

[48] Richard Nelson and Sidney Winter, *An Evolutionary Theory of Economic Change*. Cambridge, MA: Harvard University Press, 1982.

[49] Jan Fagerberg and Bart Verspagen, 'Technology-gaps, innovation-diffusion and transformation: an evolutionary interpretation', *Research Policy* 31, 2002, p. 1291, 1291.

(Chapter2). Firms flourish and perish largely because of better technologies. Although evolutionary economics draws on mathematical tools, it also adopts an appreciative approach where the process of structural change is understood as historical: "driven by firms, governments and other organizations…with a diverse set of motivations, decisions, rules and capabilities (rather than optimizing behaviour and perfect information)." Major contributors to this economic thinking, Fagerberg points out, are Joseph Schumpeter and, in contemporary times, Chris Freeman, along with economic historians such as Moses Abramovitz, Nathan Rosenberg, and Alexander Gerschenkron.

It is difficult to establish the direct connection between material and intellectual forces for ascertaining the political questions of who-gets-what and who-benefits. But over the years, this élite group in the PES would form the strongest network of well-placed and very influential economists, which Gerardo Sicat describes as a "tripod", representing "government, academe, and business".[50] A list of the Society's leadership (presidents) reveals the stunning grip of this élite group over the development course of the country.[51] To illustrate the point, the PES economists were in the Central Bank of the Philippines, the OP (Office of the President), and the NEC (National Economic Council) to form the present NEDA (National Economic and Development Authority). Armand Fabella led the PIA (Program Implementation Agency), Benito Legarda was with the Central Bank, and Gerardo Sicat was to become the head of NEDA during Marcos's rule. In 1967 Sicat's research program was instrumental in providing "comprehensive and continuous critique of the dominant import-substituting industrialisation policies… based loosely on the neoclassical model (Heckscher-Ohlin-Samuelson) of international trade."[52] This would "become government orthodoxy" when Sicat was appointed by the then President Marcos as chair of the NEC in 1970 and Secretary of Planning. Sicat's writings, as he would put it, "had a share in changing the direction of thinking and discussion of economic policies."[53] His influence in shaping neoclassical orthodoxy in the country can be ascertained by what Alecks Pabico calls as "that ubiquitous textbook …with blue cover that has been used by millions of [Filipino] students."[54] The UPSE (University of the Philippines-School of Economics), according to de Dios, was very much part of the whole debate in that the "argument for a change in economic direction was supported by research of other economists (based mostly at UP)" so that "the critique of the ISI strategy approached what amounted to a scientific research programme…that generated a series of theories to occupy many economic researchers."[55] Sicat was among the earliest and the most consistent proponent of export-oriented industrial development for the Philippines, de Dios notes, in emulation of the emergent success of Taiwan, Hong Kong, and South Korea. There is a remarkable continuity in economic liberalism engineered by the liberal technocrats who dominated Philippine policy formulation in the Philippines from 1962 to the present (2007). The import-substitution of the 1950s was the only time in the country's history that the nation had a brief reprieve from the vagaries of an open economy. Presidents Marcos (1965-1986), Aquino (1986-1992), Ramos (1992-1998), Estrada (1998-2001), and Macapagal-Arroyo (2001 until 2010) continued the practice of appointing economists as development planners, central bankers, and finance and budget ministers. The reason for this continuity in policy, according to de Dios, "was the homogeneity of economic opinion in mainstream economics itself":

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[50] Gerardo Sicat, *New Economic Directions in the Philippines*. Quezon City: University of the Philippines Press, 1974, p. 7.

[51] Most of the Society's presidents, if not all, at one point in their lives held key Cabinet positions, especially as economic managers. These include Armand Fabella (1961), Amado A. Castro (1962/63), Benito F. Legarda, Jr. (1963-64), Agustin L. Kintanar (1964-65), Placido L. Mapa, Jr. (1965-66), Jose Encarnacion, Jr. (1966-67), Gerardo P. Sicat (1967-68), Edgardo P. Zialcita (1968-69), Sixto K. Roxas (1969-70), Antonio V. Ayala (1970-71), Jose E. Romero, Jr. (1971-72), Quirico S. Camus, Jr. (1972-73), Bernardo M. Villegas (1973-74), George Piron (1974-75), Vicente B. Valdepeñas, Jr., Vicente R. Jayme, Jr. (1975-76), Vicente R. Jayme (1976-77), Jesus P. Estanislao (1977-78), Mahar K. Mangahas (1979), Manuel S. Alba (1980), Ramon K. Katigbak, Jr. (1981), Cesar P. Macuja (1982), Vicente T. Paterno (1983), Filologo Pante, Jr. (1984), Emmanuel T. Velasco (1985), Edita A. Tan (1986), Ernesto M. Pernia (1987-88), Ramon B. Cardenas (1989), Benjamin E. Diokno (1990), Vaughn F. Montes (1991), Alejandro N. Herrin (1992), Mario B. Lambert (1993), Victor B. Valdepeñas (1994), Margarito B. Teves (1995), Felipe M. Medalla (1996), Emilio T. Antonio, Jr. (1997), Cayetano Paderanga, Jr. (1998), Romeo L. Bernardo (1999), Dante B. Canlas (2000), Ruperto P. Alonzo (2001), Cielito F. Habito (2001), Emilia Boncodin (2003), Gilbert M. Llanto (2004), Alexander C. Escucha (2005), Arsenio M. Balisacan (2006). The current president is Michael M. Alba.

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[52] de Dios, 'From Sancianco to Encarnación', p. 50.

[53] Sicat, New Economic Directions', p. vii.

[54] Alecks P. Pabico, 'PCIJ: Has NEDA gone *nada*?, http://www.gmanews.tv/print/64042, October 11, 2007.

[55] de Dios, 'From Sancianco to Encarnación', p. 51.

> Needing their own technical people, the Aquino, Ramos, and Estrada governments replaced the Marcos-appointed technocrats with others with the same professional training and who shared the same paradigm. While policy-differences would arise over debt and short-run macroeconomic policies, the professional mainstream economists shared a remarkably unified overall analysis of the country's development problems particularly in the matter of the liberalisation of trade and the promotion of domestic competition, which would be carried out from the late 1980s throughout the 1990s. The homogenization of the economics profession through the schools and through this the continuity of economic policy and rhetoric in the country vindicates Keynes's dictum that it is ultimately "ideas, not vested interests, which are dangerous, for good or evil".[56]

If there is an obsession for export-promotion strategy by Sicat and those adherents to neoliberal policies, it is protectionist policies that they hated the most. Protectionism, they say, "distorted commodity prices as well as distorting factor prices…i.e., cheapening capital and making labour more expensive, with deleterious effects on employment."[57] The campaign against IS strategy was propped up by international economists. This came with the publication of Gustav Ranis's study (from Yale University) known as the 'Ranis Report' of 1974, commissioned by the Philippine government through Sicat's NEDA. The Report insisted on abolishing the minimum wage and demanded the dismantling of protectionism. That there are transnational forces involved in Philippine policymaking and agenda-setting is clear. De Dios points out that the Ranis Report was a collaborative work between local and US talents: "As the citations showed…the work by then involved not only foreign talent, but relied heavily directly or indirectly on the previous research work of Filipino scholars, particularly those from UP, an arrangement started and encouraged by Sicat."[58] Getting foreign experts for "expert advice" as a basis for "the conditionalities imposed" by the IMF and World Bank, de Dios notes, "served merely as external supports to tilt domestic policy debate towards what were already pre-existing domestic policy proclivities." Filipino economists themselves were convinced of the validity of neoclassical economics. They just needed sometimes "a good dose of prominent 'names' in the profession…to steer crucial domestic debate." Beyond that, however, key figures in Philippine policymaking had links with WB and IMF as staff and in international banks. For example, Roberto de Ocampo, who took his MBA at the University of Michigan and served as the secretary of finance during the Ramos administration, worked as a senior loan officer at the World Bank. Jose Isidro N. Camacho, a Harvard business School MBA alumnus, before joining public service as secretary of finance in the Macapagal-Arroyo administration, was an international banker. He was Vice President and General Manager of the BTC (Bankers Trust Company) in New York and was responsible for the overall business dealings of the bank in the Philippines. He represented the BTC in the restructuring of negotiations with both the government and specific borrowers after the debt crises in 1983 and helped develop and execute the first debt-for-equity transactions in the country even before the Central bank-sponsored program was put in place.[59] The present governor of the central bank of the country, Amando M. Tetangco, Jr., who had his MA in Public Policy and Administration from the University of Wisconsin, had served as Alternate Executive Director of the IMF in Washington, D.C. in 1992-94. At the IMF he participated in policymaking on the IMF Executive Board and was involved in providing economic policy advice to various governments in the contexts of IMF Board Meetings and during visits to member countries. Another key central bank official with links with international banks is Rafael Buenaventura. With an MBA obtained at the Stern School of Business of the New York University, Buenaventura worked as CEO of Citibank Philippines. While still with Citibank he became a member of the committee of private and government experts charged with negotiating the restructuring of Philippine debt in the 1980s. He played a significant role in the establishment of structures which ensure that international loans are serviced first even at the expense of the well-being of the Filipino people.[60]

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[56] Ibid., p. 52.
[57] Ibid., p. 50.

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[58] Ibid.

In the 1980s a liberal trading regime was progressively being pushed in three phases. The first phase known as the TRP 1 (Tariff Reform Program) was implemented during the Marcos era. The TRP 1 was part of the government's first structural adjustment program under the World Bank's SAL 1 (Structural Adjustment Loan) and SAL 2, and a standby credit from the IMF. The adjustment program involved a five-year import liberalization plan to reduce import restrictions and an indirect tax realignment scheme. As a result, both the average nominal tariff and tariff dispersion across industries were significantly reduced by up to 50 percent. The average nominal tariff fell from 42 percent in 1981 to 28 percent at the end of its implementation. Although Marcos installed a floating exchange rate between the US dollar and the Philippine peso, he actually instituted a system of selective import controls on certain items, such as agricultural products, fruits, certain industrial goods, and luxuries. But most of these were removed under the Aquino administration. The second phase occurred during the Aquino administration when more aggressive and extensive import liberalization was undertaken. The export tax on all products except logs was abolished. Arguing that bureaucracy in the Philippines discouraged foreign investments, import restrictions in the form of import licensing or an outright import ban were reduced. The number of restricted import items as a percentage of the total number of lines in the PSCC (Philippine Standard Commodity Classification) was reduced from 35 percent in 1985 to 7.5 percent in 1989. Tariff restrictions on 1,471 items were removed. The third phase occurred during the Ramos administration. In the name of global competitiveness further trade liberalization under Executive Order 264 was instituted. With the ratification in 1995 of the Uruguay Round of GATT (General Agreements on Tariffs and Trade), the Philippines had committed itself to binding 2,800 industrial and 744 agricultural tariff lines. The aggressive tariff reduction deprived the country of much-needed revenues. In 2003, shortly after he resigned as Finance Secretary, Jose Isidro Camacho admitted that the "aggressive tariff reduction" in the Philippines to honour its commitment to the WTO's trade liberalization program had largely contributed to the severe deterioration of fiscal performance from the mid-1990s. Camacho estimated that the government had lost Php (Philippine peso) 120 billion to tariff cuts, and this could have been used to reduce its Php 210 billion budget deficit.[61]

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[59] Profile: The Honorable Jose Isidro N. Camacho, Office of the President website, http://www.op.gov.ph/profiles_camacho.asp.
[60] The Bangko Sentral ng Pilipinas, http://www.bsp-gov.ph/about/governance_amt.asp.

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[61] As quoted in E. Borras, 'Government loses Php 120 billion to tariff cuts', *Businessworld*, October 20, 2003.

We need to get to the core of the problem. In 1978 the influential Philippine historian Renato Constantino indicted the Philippines as a "nation of consumers" rather than producers.[62] "Our people are poor", he laments, and "this is because as a nation we have always been suppliers of raw materials and buyers of expensive finished goods." Constantino described a situation that was true in the time of his writing as it is today: "The goods we manufacture are mainly just packaged or assembled here. We have thrown our doors wide open to foreign investors and we believe that we are being aided by these foreign investors when the truth is just the reverse." More than two decades later, the Philippines has not only become a nation of consumers and salesmen but also an exporter of its own people as overseas workers. What began as a "stop-gap measure", says Carmelita S. Dimzon, the director of pre-employment services, POEA (Philippine Overseas Employment Administration), to "abate the problem of employment then…evolved into a permanent program. We sent them abroad because they don't have jobs here."[63] Overseas jobs became a viable source of employment and foreign exchange for the government, but there are accompanying problems. Cielito F. Habito, economist and former director-general of the NEDA, points out that families are being torn apart with the OFW (Overseas Filipino Workers) phenomenon. The Habitos run a private school in Laguna and they noticed that children of OFWs appear to have "more problems" in school. He says that "ultimately, those remittances are just money", but "for me keeping the family together is more important." Addressing the OFW phenomenon should be a long-term effort. Habito suggested that the huge amounts of remittances sent home by OFWs could actually be "mobilized" for national development, especially if these are channeled to productive ventures like SMEs. However, Llorito and Payuan point out that "he [Habito] himself was surprised that even up to these days, there are no clear ideas both from the government and the private sector on how exactly to do it." [64] It should not surprise Habito, I would say. He had six years as head of NEDA which was "very powerful, particularly given its oversight function with respect to the plans of government agencies." As one NEDA official claimed, NEDA "has so much clout … it was looked up to by the Cabinet."[65]

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[62] Renato Constantino, *Neo-colonial Identity and Counter-Consciousness: Essays on Cultural Decolonization*. London: Merlin Press, 1978, p. 172-173.

[63] Dave L. Llorito, 'OFW dollars help cushion impact of economic troubles', Special Report, *The Manila Times*, http://www.manilatimes.net/others/special/2002/nov/04/20021104spe1.html.

In the Philippines, economist-technocrats wield tremendous influence in the economic and social life of the country because leaders depend on them for advice. As Habito once stated: "We can expect every serious candidate [for political office] to obtain economic advice from largely the same small pool of highly trained economists in the country. Unlike lawyers, there really aren't all that many of us, believe it or not".[66] Felipe M. Medalla, one of those élite 'PES boys' who once headed the NEDA under the corrupt Estrada administration, claimed that it was his job to "stop bad things and make good things better." For this reason, "many times he said 'no' to proposed projects so that Estrada came to the point of casually referring to him as 'Dr. No.'"[67] These cosmopolitan technocrats embrace economic liberalism not only as a result of pressure from multilateral organizations but because they are convinced about the fundamentals of economic liberalism. As one technocrat states: "Imposed, maybe in one way, but on the other hand the mainstream decision makers – [the] technocracy and policymakers – also internally believe in that".[68] The technocrats should know that their economic development visions not only inform what they think appropriate policy should look like, but what an economy is and how it should be thought of and the reasons why there should be one. If they had envisioned an equitable and just society and that this has remained elusive for so long should have made them reflect upon their "way of seeing things".

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[64] Ibid. http://www.manilatimes.net/others/spcial/2002/nov/06/20021106spe1.html.
[65] Pabico, 'PCIJ: Has NEDA gone nada?', http://www.gmanews.tv/print/64042.
[66] Quoted in Walden Bello, 'Academics, power, and the crisis of the university', Speech given during the Linggo ng KAPP, College of Social Sciences and Philosophy Week, University of the Philippines at Diliman, February 15, 2005, p. 3.
[67] Pabico, 'PCIJ: Has NEDA gone nada?', pp. 2-3.

An examination of Philippine economic and development planning reveals the bankruptcy of neoliberalism as a philosophy to carry the country forward toward economic progress. The Filipino technocrats' idea for national development was fundamentally not based on building a local manufacturing economy, but on foreign trade and investments. Put simply, the Plan 'ruled out' the path of industrialization toward national development by failing to develop an economic development strategy wherein technology and innovation are at the core of developing the agriculture and industrial production sectors. The MTPDP (Medium Term Philippine Development Plan) 2004-2010 explicitly articulates that wealth and job creation will depend on "trade and investment", "agribusiness", "environment and natural resources", housing construction", "tourism", "infrastructure", "fiscal strength", "the financial sector", and "labour".[69] The key strategies are the development of "two million hectares of new lands for agri-business", the creation of "three million micro-enterprises", and "investments in mining, oil gas exploration", "the re-launch of massive reclamation projects", and "the development of the Clark-Subic corridor as the logistics center for the Asia-Pacific Region". A counterpart Plan developed by the Philippine legislature which serves as the blueprint of the legislative reform agenda for the 14th Congress is premised on the same development framework as the executive's MTPDP. The legislative Plan, *Gearing Up the Nation for Growth and Competitiveness* (2007) articulates a development framework which attributes economic growth to physical capital stock and high rates of investment in human capital.

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[68] Bello, 'Academics, power', p. 2.

[69] See, Government of the Republic of Philippines, Medium Term Philippine Development Plan 2004-2010, Manila, Philippines: National Economic and Development Authority, http://www.neda.gov.ph/ads/mtpdp/MTPDP2004-2010/.

> Economic growth models show that a key factor in rapid and sustained economic growth is the accumulation of capital. Increases in capital stock through investment enlarge an economy's productive capacity; with more capital, labor's productivity increases and growth in output per capita is achieved. Savings is critical to spur investment. If domestic savings and investment are inadequate, they could be augmented by foreign direct investment or borrowing. However, borrowings should be kept at sustainable levels, so as not to be a threat to financial and macroeconomic stability.[70]

NSI scholars consider these factors as necessary, but far from sufficient. Given the development premise, high in the legislative agenda were "macroeconomic stability", "trade and investment promotion", "agricultural competitiveness", "human capital", and "public sector governance". Technological change was simply relegated to "another factor" in economic growth. Technical change is promoted through investment in human capital or education, "learning by doing", and "research and development." However, there was nothing in the list of legislative proposals that would support "learning and doing" or "research and development". As the old adage says, the devil is in the detail. Consistent with neoclassical economics philosophy where technology is practically assumed as given and where the necessity for organizing production is ignored, the Plan sees foreign direct investments as a "very important" strategy "to bring new technologies and management methods, more efficient production processes". So, how then is competitiveness to be achieved? As the document states:

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[70] House of Representatives with the support of the Angelo King Institute –Partnership Advocacy for Competitiveness and Trade, *Gearing Up the Nation for Growth and Competitiveness: Perspectives from the Secretariat in Support of Legislative Agenda Setting for the 14th Congress,* edited by Manuel P. Aquino and Violeta T. Veloso. Quezon City: House of Representatives, July 2007, p. 9.

> Critical to attaining competitiveness are the firm advocacy and implementation of policies that promote trade and investments. Domestic reforms in the key areas of trade liberalization, investment liberalization, infrastructure, small and medium enterprises, and tourism could help improve the country's competitiveness.

Indeed, there is nothing new in the MTPDP because previous Plans were similarly framed. The goal in agri-business expansion is to promote export crop production rather than agri-based food manufacturing; thus, the creation of micro-enterprises rather than SMEs accompanies the agri-business expansion. This is a far cry from Taiwan's strategy early in its industrialization process. Taiwan's government was guided by the vision of "develop[ing] agriculture by virtue of industry and foster[ing] industry by virtue of agriculture".[71] The Legislative Plan, at least, advocated for agri-industrial development. Foreign trade and investments have always been the primary strategy for wealth creation, especially during the Marcos, Aquino, and Ramos administrations, even though the desired goal was industrialization. At least the present development planners have implicitly accepted their incapability to strategize a real industrialization project by setting a 'reachable goal' but below par in comparison to other Asian countries – the development of micro-enterprises. As one influential Filipino economic manager recently said, "it is too late to be competitive in manufacturing".[72] But how could the Philippines provide a higher standard of living for more than 80 million Filipinos without creating competitive technology-driven SMEs? In 2005 the FIAS (Foreign Investment Advisory Service) of the World Bank and IMF conducted a study that might help the technocrats to design programs to foster linkages between electronics TNCs and domestic firms in the Philippines. The study reveals that the Philippine government does not really have a clear vision or road map for building a globally-competitive electronics industry. FIAS highlighted the factor(s) responsible for such a failure:

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[71] Mo-Huan Hsing, *Taiwan Industrialization and Trade Policies*. Bungay, Suffolk: Great Britain: Oxford University Press, 1971, p.185; Samuel Pao-San Ho, *Economic Development of Taiwan, 1860-1970*. New Haven and London: Yale University Press, 1978, p.105.

> The Department of Trade and Industry (DTI) has launched a program to diversify electronics, but implementation has been weak. The program is thinly staffed, with an Electronics Team of less than five persons. The "Brand Managers" (or "Industry Champions") lack the skills and knowledge to provide detailed assistance to the sector. They cannot articulate a clear vision for the sector, lack the necessary international network of contacts to bring in significant investments, and do not have the understanding of the value chain needed to identify areas where the industry needed support. A successful program would need to be better funded, have more appropriate talent and experience, and be accorded *sufficient power* within the government to be able to promote the sector effectively.[73] (emphasis added).

Indeed, 'sufficient power' is absolutely essential because a dynamic industrial productive sector is never a given or natural. However, such power will not be of any help if the underlying philosophy of how things are done in the country is not changed. A coalition of political-ethical and economic forces that takes a robust agriculture and industrial base propelled by innovation is crucial for that change to happen, as the experiences of other countries show. Laissez faire does not work in developing countries where institutions supportive of a robust industrial base are simply not there. They have to be created collectively as the early experience of the UK (Chapter 3), US and Japan (Chapter 4), Taiwan (Chapter 5), and South Korea (Chapter 7) would show us.

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[72] A statement made by the Governor of the Bangko Sentral ng Pilipinas (Central Bank of the Philippines), Mr. Rafael Buenaventura. See David Diamond, One Nation, Overseas, http://www.hirefilipino.com/OneNation /htm., accessed June 9th, 2006.
[73] WB-FIAS, 'Fostering linkages', p. 35.

Theoretically, policymaking in the Philippines, as a republican democracy, is shared by three structures of government. Legislated policies are formulated by Congress through its power to enact laws. This power is shared with the President, as the Chief Executive of Government who is elected by the direct vote of the people. Then the Judiciary interprets the law. By design the Philippine political structure is decentralized, providing institutional checks and balances. The sharing of power by separate institutions is to prevent the gradual concentration of power in the same department. However, in the Philippines the President has such power embedded in the constitution (Chapter 5) that the chief executive of the bureaucracy has tremendous command over resources, which often erodes congressional initiative in the formulation of national policies. Although the president makes the final decision, that decision is informed by expert advice from the technocrats in the cabinet. But within the executive branch, there are agencies that wield tremendous power over policies and resources. William Padolina, former Secretary of the DOST, admits that the DOST Secretary in the Presidential Cabinet is "at the lowest end of the totem pole", and the power of the liberal economic managers has been formidable. He succinctly articulated the tremendous ideological battle that has to be fought within the President's Cabinet. He points out:

> The problem is that our economic development model has completely followed the liberalized free trade model in which development is allowed to proceed on the basis of market forces; and market forces in a developing country usually are imperfect forces; either you have monopolies, cartels; very low technological back up; unpredictable legal systems with a judiciary not well-informed to settle technological dispute. It is difficult to operate in a situation where you are developing your economy and you are developing the systems to help develop the economy without an industrial policy. And, unfortunately, we moved totally to the free market economy,

> not bearing in mind that these market economies which exist really had industrial policies in the past.[74]

Padolina advocated for industrial policy in the Philippines during the Ramos administration. He lamented that it was only he and the Secretary of Foreign Affairs, Domingo Siazon, who were on the side of industrial policy as an 'alternative' development model. None of the powerful economic managers including the DTI have a real appreciation of the role of a science-based and innovation-driven agriculture and industrial economy in national development. According to Padolina, Siazon, who used to serve UNIDO (United Nations Industrial Development Organization), had embraced industrial policy and knew what an industrial policy could do to a country because UNIDO had been instrumental in designing Malaysia's. Industrial policy is a broad economic policy instrument that is particularly focused on industrial activity and development. Hence, trade and technology policies are a part of industrial policy in its broadest sense. Trade policies, such as subsidies and duty drawbacks on inputs for exported goods, and technology policies such as support for foreign technology acquisition and R&D (research and development) activities are policy instruments used to promote growth and dynamism in the industrial sector.[75]

According to Padolina, the Philippine economic managers opposed industrial policy, and particularly technology policy, arguing that "one cannot engage in industrial policy anymore".[76] These were the bureaucratic élites of NEDA, DoF (Department of Finance), DTI, and DBM (Department of Budget and Management). I would say that Padolina, a chemist not an economist, has a basic understanding of the importance of developing production technology and of focusing development efforts in a strategic industry. However, in the minds of these powerful technocrats economic management in the Philippines is about foreign trade and fiscal management; that is, tax or revenue collection and allocation under a trade-oriented economy. It is not about technology-based agriculture and industrial production and resource generation. This is evident in the composition of the most powerful institution in the country as far as resource generation and utilization is concerned. In the Philippines this function is undertaken by the DBCC (Development and Budget Coordination Committee). The Committee is composed of the Secretaries of the DBM, the DoF, NEDA, OP, and the Central Bank. These are the powerful 'economic managers' of the country who basically recommend to the President of the Philippines how the economy is to operate. In the interviews with Filipino corporate executives and industry officials, the lack of government leadership to bring the local industry onto a par with its Asian neighbours was underscored. Filipino industrialists wonder why the aggressive initiatives of governments to build industries in China, Thailand, Taiwan, Singapore and South Korea are so scarce in the Philippines. They want to see strong political leadership 'providing' appropriate environments conducive to the development of local Filipino firms connected to multinational corporations as suppliers. But this will not happen unless there is some shift in economic development thinking. A technology and innovation capacity-driven development is absent in the Philippines.

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[74] Personal interview with Dr. William G. Padolina, Los Banos, Laguna, Philippines, June 17, 2005.

[75] Organization for Economic Cooperation and Development (OECD), *The Aims and Instruments of Industrial Policy: A Comparative Study*. Paris, France: OECD Publications, 1975.

[76] Padolina, personal interview.

Wealth creation through a technology- and innovation-based industrial sector does not enjoy significant political emphasis in the management of the Philippine economy. In the words of Ricardo Gloria, a former Secretary of the DOST, "our political leadership thinks that S&T is something that can be postponed".[77] With such a general attitude, what was left to build industry was trade without a complementary technology policy. Resources and policies have always been slanted against development of the agriculture and industry sector. Because the current Philippine Medium Term Plan rules out the manufacturing industry as a means to economic development, the DOST's goals, strategies and action plans are focused on harnessing science and technology in the agriculture and service sectors, particularly IT. The DOST promotes a NSI approach with the goal "to generate, absorb new knowledge and translate it to products and processes and job opportunities…fundamental to the dynamic functioning of innovation systems".[78] The problem, however, is that the establishment of NSI was articulated separately and was not cogently integrated with the strategies for the agriculture, service, and industry sectors. It is really quite difficult to grasp, given that NSI is supposed to be a 'system', and thus is expected to function as a glue that integrates education, science and technology, industry, agriculture, and service sectors. Moreover, planned actions and strategies are still very much molded by trade and services policy rather than encouraging a high level of 'innovative activity' of local SMEs and a handful of large Filipino firms so that they are able to produce 'new' goods and 'new' techniques. The Plan states:

> Product and market reforms such as the proposed competition policy …shall enable more rapid diffusion of technology and information, and strengthen incentives for firms to innovate and adapt goods and services to changing consumer needs.[79]

Certainly, competition policy is high on the agenda of the WTO, but it is not certain whether that should be a priority in the Philippines for encouraging local firms to innovate. Market policies are needed to introduce competition, a significant factor in innovation, but they are inadequate. The measures were designed based on an implicit assumption that Filipino firms had a proclivity to buy technology and learn and innovate from it. However, that is not necessarily the case. Technology innovation and learning are expensive undertakings and involve high risks, and firms are mainly interested in profits and avoiding as much risk and uncertainty as possible (Chapter 1). Hence, in the experience of South Korea, for instance, policy and institutional incentives were created to engage local firms to undertake innovative activities. South Korea went beyond competition policy by providing various tax incentives and financial support through preferential funding for corporate R&D. Complementing the state's support are venture capitalists that offer technical and financial support for venture businesses.[80] In the Philippines, the presence of multinational assemblers presents an opportunity to develop the supplier industry which could be undertaken by SMEs. In the interviews conducted, TNC executives indicated that if local Filipino suppliers are able to produce globally competitive component products in the required quantities, multinationals would prefer to buy locally because the costs tend to be lower than for imported products. Moreover, geographical proximity is a huge advantage for local suppliers, especially in lean production systems where low inventories and flexibility in production scheduling are central to the whole process. Product designers need to work closely with suppliers to make sure that technical specifications and high quality standards for products are exactly met, and problems that emerge at any point in the process can be immediately addressed.

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[77] Personal interview with Dr. Ricardo T. Gloria, Los Banos, Laguna, Philippines, May 2005.
[78] Government of the Philippines, MTPDP 2004-2010, p. 234.
[79] Ibid.

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[80] Cheng-Fen Chen and Graham Sewell, 'Strategies for technology development in South Korea and Taiwan: the case of semiconductors', *Research Policy* 25 (5), 1996, pp. 760-761.

The major constraint impeding the development and growth of the local supplier industry especially local capital is technological capability. There is an existing local capital sector, those members of the EIAPI (Electronic Industries Association of the Philippines), separate from the SEIPI (dominated by multinationals and large Filipino electronic companies), with which the government could work closely to elevate them to become suppliers for multinational companies. For instance, EIAPI firms due to certain requirements are not able to qualify for the incentives stated in the Omnibus Investment Code which are biased toward multinational firms. Furthermore, the very liberal trade regime has added to their problem, given the influx into the country of superior, yet less expensive products. The central role of *the firm* in this whole process of innovation and industrial development has escaped the imagination of Filipino bureaucrats. This is, of course, unavoidable given the tendency of development planners, who because of fear of crony capitalism focus more on bringing in foreign investors rather than encouraging local capital to develop. The Plan intends to provide:

> Greater support for research in the public sector, specifically in the areas of agriculture, health, engineering and social sciences, shall be provided to ensure that local interests and needs are acted upon…Accelerate knowledge creation and transfer to upgrade technologies and increase productivity…a favourable policy environment to intensify knowledge creation will be pursued by allocating a bigger percentage of the agency budgets for R&D and field extension work and providing funds for knowledge creation and management activities within the organization.

This strategy is based on a premise that technology generation and diffusion are a linear process and market-mediated. This means that the public sector generates the technology and, through market mechanisms, firms are assumed to buy the technology. Such an assumption has been held since the establishment of public sector research in the country, but is not the reality.[81] The former minister of science and technology, Emil Javier, pointed out that research results from the public sector were gathering dust because the market for public-sector-generated technologies had not picked up.[82] While the DOST has stepped up its technology transfer efforts using technology forums and other avenues, results have not been spectacular. This problem for the private sector to engage in technology and innovation-driven industrial production, common in developing economies, was long ago solved among NICs such as South Korea by encouraging R&D activities within the firm itself, also known as *industrial research*. To catalyze such a process, the South Korean government provided initial financial policy, and institutional support which enabled entrepreneurs to undertake in-house R&D. Once this goal was accomplished, the industrial sector became the prime mover in industrial research in these countries (see Chapter 7). The Philippines does not prioritize scarce resources to support industrial research in order to catalyze this crucial activity for industrialization and familiarize the private sector. In the words of Romeo Bautista and Gwendolyn Tecson:

> International trade represents an alternative "technology" to domestic production … More importantly, international trade has significant dynamic effects that can

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[81] This thinking is the complete opposite of Chinese policymakers, for instance. In China the government invests money for R&D in the public sector, especially in universities. However, innovative thinking abounds in the sense that they have created firms based in universities; they call them UREs or "university-run enterprises". Chinese personal computer companies, such as Lenovo, Founder, and Tongfang were established and operated by universities. Jong-Hak Eun, Keun Lee and Guisheng Wu (2006, p. 1332) point out that this type of company whose number has now swelled to more than 5,000 with some of them listed in stock markets in mainland China and Hong Kong are not the same as those we understand as university spin-offs; they are called "spin-arounds" in the sense that "they are established, staffed, funded and managerially controlled by the mother institutions (i.e. universities)…and they remain strongly connected to the mother institutions through a sort of "umbilical cord". Unless the Philippine government allows such a type of arrangement, or something similar happens in the Philippines, scarce government resources will be wasted.

[82] Emil Q. Javier, 'Linkages of Science, Education and Industry', in The Context of Science Education: A View of the Thinking of Filipino Leaders of the Public and Private Sectors About What Science Education Should Be Like for the Country, Proceedings of the Consultative Conference on Science Education Development Plan, 1983, p.83

> provide a strong stimulus to economic growth. It improves a developing country's access to new production technologies, to international capital, and to labor skills (including management) leading to an outward shift of the production possibility frontier. Moreover, foreign trade overcomes the limitations of a small domestic market, enabling the country to take advantage of specialization and scale economies. It helps promote the growth of national income without being subject to a binding demand constraint.[83]

This mindset of influential Filipino economists uses foreign investment and international trade to take care of the technological development in the country, assuming that innovation process will take place as a natural process following the flow of technology into the country. Such an assumption is flawed when we consider technology and innovation as social processes (Chapter 1). In the early industrial period, technology was largely based on artisanal or engineering skills. A country importing technology usually possessed these skills in sufficient quantity and foreign techniques could be adopted without too much difficulty. However, contemporary technology in most cases is not simple. Modern technology can no longer be readily acquired by a few individuals with some professional experience as was the case in earlier eras of industrialization.[84] Competitive enterprises are built around collective technical, commercial, financial and scientific know-how and a wider network of institutions for research and for diffusion of scientific and technological change. This, however, requires a government bureaucracy that is knowledgeable and skilled in developing and articulating a path to industrialization other than via liberal trade. This core group of bureaucrats must have different perceptions and understanding of the present political economic realities of the country within the context of a rapidly globalizing world economy.[85]

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[83] Bautista and Tecson, 'International Dimensions', p. 137.

[84] See, for example, Claudio Ciborra, 'Alliances as learning experiments: cooperation, competition and change in high-tech industries', in Lynn Mytelka (ed.) *Strategic Partnerships and the World Economy.* London: Pinter Publishers, 1991, pp. 51-77.

In the contemporary global economic system, the production and use of knowledge is at the core of value-added activities, and innovation is central to firms' and nation's strategies for growth.[86] In this situation, the speed at which firms, especially in high-tech industries, are able to accumulate, control and apply diverse technological resources for the next round of competition, is crucial.[87] As a result, new forms of competition and cooperation are emerging, in which rival firms engage in cooperative relationships with each other. Among the main reasons for cooperation are the sharing of huge R&D costs and the risks involved in joint projects, encouragement of combined multidisciplinary know-how, and exploitation of the opportunity to apply firm-specific knowledge and competences accumulated in other sectors by leapfrogging learning.[88] For a firm to be able to develop a product and position itself in a multitude of existing or potential markets, it needs to combine generic technologies from distinct disciplines. But no firm is capable of doing in-house research on all the potential areas or even the largest ones. For instance, in the semiconductor industry it would require almost the whole year's income of a typical electronics plant to invest in a new microelectronics production line.[89] The private-private research partnership involving only firms engaged in research ventures, strategic alliances, and networks is only one part of the equation.

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[85] See, for instance, Vivek Chibber, 'Bureaucratic rationality and the developmental state', *American Journal of Sociology* 107 (4), January 2002, pp. 951-989.
[86] Daniele Archibugi and Jonathan Michie, 'Technology and innovation: an introduction', *Cambridge Journal of Economics* 19 (1), 1995, p.1.
[87] Ciborra, 'Alliances as learning', pp 51-74.
[88] In those leading and most dynamic industries, for example, product life cycles have been rapidly shortening so that it becomes very difficult for firms to invest on high fixed capital costs for each new product generation.
[89] Lynn Krieger Mytelka, Crisis, technological change and strategic partnerships, in Lynn Krieger Mytelka (ed.), *Strategic Partnerships and the World Economy.* London: Pinter Publishers, 1991, p. 21.

The other part is generally termed 'public-private research partnerships', which have gained in importance in recent years. Public-private partnerships "by definition, receive some level of support from public institutions … such as government subsidies for projects funded by private firms, shared use of expertise and laboratory facilities, university technology incubators, science parks, licensing agreements between universities and firms, and university-based start-ups."[90] Henry Etzkowitz and Loet Leydesdorff call this organizational innovation, involving the intertwined trilateral network of industry-university-government, a "triple helix". With the increasing pressure to successfully integrate the market-pull and technology-push forces, "hybrid institutions" have emerged at the interfaces of industry-academe-government institutional partnerships.[91] University technology transfer takes varied forms, such as licensing and sponsored research agreements, science parks, university-based entrepreneurial start-ups, co-authoring between academics and industry scientists, faculty consulting, and educational partnerships involving universities and firms.[92]

The development opportunities opened up by technologies will not be exploited effectively unless Filipino businessmen have the technological and managerial competence, the incentives and the means necessary for innovation, and unless the labour force has the possibility of adapting, without undue hardship, to the consequences of technological innovation. To accomplish these enormous tasks requires the active leadership of government to achieve coordinated action. In the Philippines, industrial development is in its embryonic form, enabling commercial and trade rather than industrial forces to dominate the economy. In both IS and EP development periods, a dual economy with established capital-intensive Filipino firms, unconnected to the local economy which was dominated by a small household cottage industry, was developed. A handful of big corporate firms in the supposedly high-tech industry are still engaged in basically import-export business with cheap labour in assembly and packaging activities as the value-added. Industry is driven by TNCs located in enclave export processing zones and production is largely limited to assembly. This is supported by the findings of Yuichiro Uchida and Paul Cook's study which used international trade specialization as a measure of competitiveness. Uchida and Cook found that 10 industries in the Philippines lost their technological advantage, such as motor vehicles and parts and fabricated metal products, while several low- and medium-technology industries, particularly foods, gained advantage during the period examined. The Philippine electronics industry recorded the highest level of trade advantage without technological advantage.[93] This is largely because it is an import-export and assembly business. Although the Philippine economy is still fundamentally commercial and financial, there are embryonic Filipino industrial entrepreneurs which have transplanted themselves from the US back to the Philippines. But they need a nurturing environment that only the developmental technocrats can establish. This integrated environment presents the crucial role of non-price factors, such as human resource endowments (skills and workers motivation), technological factors (R&D capabilities, ability to adapt, and use technologies), and managerial and organizational factors (not only within the firm but also regarding relations with other firms, customers, suppliers, and public and private research institutes).[94] It is only through this environment that a technology-driven production strategy could be established in the Philippines, as in Taiwan and South Korea.

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[90] Albert Link and Donald S. Siegel, *Technological Change and Economic Performance*. London and New York: Routledge, 2003, pp.98-119.
[91] Henry Etzkowitz and Loet Leydesdorff, 'The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university-industry-government relations', *Research Policy* 29, 2000, pp. 110-111.
[92] Link and Siegel, *Technological Change,* p. 98.

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[93] Yuichiro Uchida and Paul Cook, 'The transformation of competitive advantage in East Asia: an analysis of technological and trade specialization', *World Development* 33 (5), 2005, pp. 709, 715.

The technocracy is the particular element of the historic bloc that has become the cultural obstacle. To cite an example, electronics industry officials in the Philippines would like to see a supportive university system that produces engineering graduates with a level of competency useful to the industry, even at a basic level. But right now, university graduates in the Philippines have a "zero level" of competence based on the electronics industry's standards. A newly hired engineer still has to undergo training for six months to bring his or her competence at least up to the first level desirable to the company. An engineer with level one competence should have basic knowledge on semiconductors, for instance. Industry officials found it very hard to convince the CHED (Commission on Higher Education) to change the engineering curriculum for the bachelor's degree in engineering in the Philippines in order to meet the needs of the industry. Universities were hesitant to change their curriculum because of fear that their graduates would fail in the engineering licensure exams because the country's PRC's (Professional Regulatory Commission) 'outmoded' and 'old' board of examiners would still be setting engineering board exams based on 'pumps' and 'steam power plants'. The officials interviewed point out that coordinating activities such as these should have been the responsibility of government. Because no government is actively 'looking after' the needs of the industry was on the horizon, the industry designed their own solution, and brought in the government, instead. The industry created the ARCDI (Advanced Research and Competency Development Institute) to address the widening gap between engineering skills and industry needs, and to increase the availability of skilled manpower for high-tech industry.[95] As one ARCDI official said, "it was the industry which thought of taking this responsibility, and then tried to work with government and academe." That same official said that "this model had been proven successful in Singapore",[96] but in Singapore it was the opposite of the Philippine situation: "The proactive [Singaporean] government which was really serious about science and technology-driven industrial development had the idea and the money to implement their idea." By contrast, in the Philippines the government was a passive actor which got involved with ARCDI because "they wanted to increase investments in the economic zones…and this was their way of planting the seed." In other words, the government wanted more foreign investments in the Philippines, but had no clue as to how to secure them, especially since trade-based incentives and income tax holiday perks did not seem to work anymore in attracting or retaining TNCs in the country.

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[94] John Clark and Ken Guy, 'Innovation and competitiveness: a review', *Technology Analysis and Strategic Management* 10 (3), 1998, pp. 363-395.

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[95] Aside from the BGN (Brain Gain Network), the prime movers of ARCDI are SEIPI, some multinational companies and big Filipino companies, such as IMI and PSi Technologies, and the Philippine government through the PEZA (Philippine Economic Zone Authority). The goal of the industry is for universities to produce at least 200 engineers with doctoral degrees, 600 engineers with master's degrees, and 200,000 immediately employable engineers. The ARCDI Incubation Laboratory is another BGN project. It intends to give Filipino researchers and technology entrepreneurs a facility and, more importantly, an environment, where they can create unique technological solutions that could spin off into globally competitive corporate ventures. It provides financial, technical, and managerial support through sourcing, selecting, planning and mentoring of incubated projects. Like ETRI, the goal of the ARCDI Lab is to create its own IP which, in turn, will be licensed to corporate partners and/or spun off into globally competitive high-tech ventures. The Laboratory is co-managed by Narra VC and ARCDI in partnership with Innove Communications, IBM Philippines, EAZIX/IMI, and the Banatao Foundation.

[96] The case of Singapore is notable in the sense of its leapfrogging strategy in order to meet the demand of its manufacturing industry, largely dominated by multinational corporations, with highly skilled engineers and scientists. Michael Hobday pointed out that in the 1970s Singapore's EDB (Economic Development Board) created novel government-industry training centers with Japan, France, and Germany. This led to the operation in 1991 of five training institutes whose main responsibility was to provide engineering, technology and craft education: the French-Singapore Institute, the German-Singapore Institute, the Japanese-Singapore Institute, the Precision Engineering Institute and the Philips-Government Training Centre. The result was phenomenal in the sense that by 1991, the National University of Singapore, Nanyang Technological University, the polytechnics and the training institutes together supplied 22,000 engineers and craftsmen per annum, an annual output of roughly 38 per 100,000 population, one of the highest levels worldwide per capita (See Hobday 1997, pp.139-140..

Industry officials admit that the pressure on them to do something to improve the 'competitiveness' of the Philippines is high because of the threat posed by neighboring countries and the world "in terms of cost and capability". They said that countries like Thailand and Malaysia are "very aggressive in their initiatives in the kind of capability they are putting in place", which they do not see in the Philippines. These industry officials looked on the 'Filipino people' as the valuable resource of the country to enable it to catch up with its neighbours, "but universities are not up to par in this competitive game", thus they have to intervene. In the final analysis, they said, "it's the capability of the people in the country that matters…because when you have highly skilled people it's almost like guaranteed that corporations will come and invest."

Right now the Philippines do not have the critical mass of engineers with masters and doctoral degrees, so the industry through the SEIPI "has put together a road map for the development of the industry", which includes "a radical increase in the number of engineers with graduate degrees in the next five years". Transnational companies would like "to expand their design teams because they would like to harness the best minds anywhere in the world" but the dilemma today is that the Philippine government seems to have the idea of "producing graduates as overseas workers, rather than using them to build the country." The government's lack of national vision to draw together the country and integrate the social forces to build a rich and strong country is a result of the ideological commitment of Filipino development planners and technocrats. At the root of the problem is a development thinking that worships, in the words of Emmanuel de Dios, "methodological individualism and the rational (optimising) behaviour" as the basis for "individual self-interested behaviour" which they think "typically leads to beneficial social outcomes."[97] In this view, the political integrative role of the state in the economy is disdained because it breeds corruption and rent-seeking. Consequently, the active role of the state in the integration of relevant actors to build NSI is viewed as destructive. As a consequence, there was no real industrial development strategy put in place during the EP period, just as in the IS period. The development strategy never went beyond the age-old trade and foreign trade and investment strategy, and economies which depend on this strategy cannot survive in a world economy populated by highly productive and competitive capitalist economies. Whether the country adopts a protected or open trade regime, the outcome was found to be the same — recurring balance-of-payment crises. Thus, John Power and Gerado Sicat argue the problem "to be deeper and more persistent" than a focus on short-run influences, such as election spending, which had always been the scapegoat.[98]

Adam Smith, Amartya Sen argues, was a promoter of liberal trade and laissez-faire. But Sen points out that Smith's ideas have a historical context, and, therefore, one needs to understand the social relations which led to Smith's advocacy for laissez-faire.[99] The English state was already capitalist and there was already a rising bourgeois class at that time so that Smith's intellectual persuasions of leaving the market free were directed to attack vested pre-capitalist material interests choking the economy and blocking the rise of England's industrial bourgeoisie. The situation in the Philippines was different because when a liberal economic regime was established by the Spanish colonial government there was no industrial bourgeoisie to speak of. This was not taken into consideration by Filipino technocrats in their development plans, and thus industrial capital in the country, until today, is suppressed. This problem becomes evident when we examine in the next chapter technological learning strategies through technology importation and industrial research (or research and development activity undertaken inside manufacturing firms) necessary to build up the country's technological capabilities in the electronics sector. South Korea's successful strategy in this sector provides a benchmark of the challenges the Philippines needs to overcome if it decides (as it has always claimed it desires) to catch up.

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[97] de Dios, 'From Sancianco to Encarnación', p. 47.
[98] John Power and Gerardo Sicat, *The Philippines: Industrialization and Trade Policies*. London, New York and Kuala Lumpur: Oxford University Press, 1971, p. 51.
[99] Amartya Sen, *Development as Freedom*. Westminster, MD: A. Knopf, 1999.

6.3 Summary

This chapter examined the EP period, particularly the growth of the electronics industry in the country. The EP strategy in the Philippines engendered a high tech industry that could only be appropriately described as an import-export business with cheap labour for assembly activity as value added. To explain the problem, the ideological underpinning of the Philippines' strategy for industrialization was examined. Ideas and ideologies are not the only forces driving the postwar politics of nation-states. However, they are indispensable for understanding the political process of state policy decisions. Ideas construct the world in which actors, in an effort to create order for this temporal world, discover, elaborate and express their own perceptions of what their problems are and how to solve them. Nonetheless, there are ideas that are dominant and ideas that are marginalized.

In the Philippines economic liberalism is an enduring colonial structure. The problem of 'lack of political will' on the part of the Philippine government is largely due to the ideological devotion to free market economics. Economic management technocrats have become the nodal link with global forces in WB, IMF, and Wall Street. It is their belief in self-regulating markets, where state intervention is disdained, which makes the transformation from mercantile to production-oriented economy difficult in the Philippines. The Filipino technocrats do not to see the importance of building up technological capabilities to industrialize. This study indicates that economic forces in the Philippines were actually capable of responding to the structural constraints created by the world economy and the Philippine state. Where the resistance for change is located is in the politico-ethical component of the historic bloc. The stubborn adherence of mainstream economists and neoliberal technocrats is the remaining stumbling block for the rapid economic development of the country. It requires only a modernizing historic bloc that understands the central role of technology and innovation in building a robust productive sector. On this account, the onus for political action to ensure capitalist transformation is borne by national élites who have a different view of things in the Philippines.

Agrarian and industrial capitalism, the not-so-secret-formula for accumulating national wealth, has eluded the Philippines, not primarily because of the much-maligned oligarchs, or the local and national despots or bosses, but because of the intellectual élites or technocrats. The problem is ideological, and this is where change has to take place for the country to move forward. As the world-famous maverick economist John Maynard Keynes aptly stated, "[the] Power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas…The ideas of *economists* and *political philosophers,* both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else" (emphasis added).[100] To adapt Keynes' statement, the Philippines is ruled by little else – the powerful cosmopolitan economists and technocrats. They possess the dominant, but not exactly the 'correct' ideas, thus they rule. The situation in the Philippines will be compared with South Korea's experience, where a robust local industry dominated by domestic capital has flourished. Industrial research and active learning from borrowed technologies promoted the development of dynamic and globally competitive South Korean capital-goods-manufacturing firms. Their absence in the Philippines is striking.

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[100] John Maynard Keynes, *The General Theory of Employment, Interest, and Money*. New York: Harcourt Brace Jovanovich, 1964 (originally 1936), p. 383.

Chapter 7 Nationalism, modern state, and innovative industry

> At the core of economic nationalism was an ontological point. His [Friedrich List's] was an ideology that started from the standpoint that the world is divided into nations, each of which had distinctive interests which were defined not just in material terms but also in terms of power and the expression of national culture and identities. Although individuals had their own private economic interests, more important from List's standpoint was their shared interest as members of the same nation. If private and national interests did not coincide, he believes the latter should prevail.
>
> ***Eric Helleiner (2002)***

> For centuries the term 'manufacturing' was synonymous with the combination of technological change, increasing returns and imperfect competition. By cultivating manufacturing, nations captured the 'good' type of economic activities. I argue that this has been the pattern of success starting in England under Henry VII, via the industrialization of continental Europe and the United states, to the more recent successes of Korea and Taiwan.
>
> ***Erik Reinert (2007)***

Like the IS development strategy before it, the EP (export promotion) strategy in the Philippines failed to transform the mercantile economy into an industrialized one, and again an 'unmodernized' bureaucracy and inappropriate development ideas were the institutional drag (Chapter 6). A vibrant and competitive local industry, characteristic of the South Korean experience, did not emerge. This transformation in the bureaucracy and the economy, however, requires purposive collective action captured in one word – politics. Politics is necessary to establish an innovative and robust production sector which is the engine of a modern, growth-oriented economy. My thesis is that the main difference between the successful electronics industry development in South Korea and the generally 'failed' attempt in the Philippines is that South Korea is a modern state whose nationalist political and intellectual leaders are capable of formulating and implementing a developmental strategy based on the synergy of agriculture and industry and the build-up of the production sectors through a functional system of innovation.

In Sub-section 7.1 I discuss the transformation of Korea's political economy, particularly the development of agrarian capitalism and the modernization of bureaucracy during the Japanese colonial occupation. Earlier chapters argued that an integrated agriculture and industry development was critical in the rapid economic rise of the UK, US, Japan, and Taiwan. The political and economic transformation served as a strong foundation for the developmental role the postcolonial South Korean state assumed. Sub-section 7.2 discusses the nationalism which had motivated a Korean ruling elite (as opposed to its globalized Filipino counterpart) committed to economic nationalism and the development of the nation's productive sectors. Sub-section 7.3 analyzes the technological learning strategies in the electronics sector, and sub-section 7.4 provides a summary.

7.1 The legacy of Japanese colonialism– a modern polity and an innovative economy

That a state apparatus may subvert the economic interest of a dominant economic class is possible because of nationalist sentiment – the feeling of collective belonging or strong attachment to and pride in the nation which forms the foundation and basis of social integration (Chapter 1). Thus, the nationalist ruling elite's thought is orientated towards broad-based modern economic activity characterized by what Reinert termed "increasing returns", which is a crucial factor in the emergence of a modern economy. Hannes Lacher points out that in a modern society, the institutional separation between the capitalist polity and economy is crucial because the power to extract surplus is premised on the control over property in the means of production located in the market rather than the possession of political authority. It is the former which is the decisive aspect in the dynamic of productive and commercial development.[1] The state is no longer directly implicated because the privatization of surplus extraction leaves the role of the state in the public domain to be the formulation and enforcement of rules for a market economy to function.

Germaine Hoston points out that "Marx's and Hegel's depiction of the Orient as a world now bypassed by history" and that "its only hope lay in the expansion of Western capitalism through imperialism", caused East Asian nationalists, especially Japanese and Chinese, to "devote considerable intellectual and emotional resources" to understanding the Asiatic mode of production and the state in Oriental society. That, Hoston points out, "pose[d] major issues concerning nationality and identity" for the Chinese and Japanese activist thinkers drawn to Marxism. For these nationalist thinkers, "the nature and role of the state in Marx's assessment of the East played a decisive role in defining these issues." Hoston argues that "the historical relationship between thought and politics is clear and striking."[2] This has significant implications in the context of economic development in Korea, where the appropriate role of the state in that process has largely been dominated by the nationalist historic bloc.

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[1] Hannes Lacher, *Beyond Globalization: Capitalism, Territoriality and the International Relations of Modernity*. Londond and New York: Routledge, 2006, p. 37.
[2] Germaine A. Hoston, 'The state, modernity, and the fate of liberalism in prewar Japan', *The Journal of Asian Studies* 51 (2), 1992, p. 288.

In contrast to the Philippines, the South Korean state is nationalist and modern, and what was significant in South Korea's colonial situation compared to the Philippines was that changes in the political and economic structure of the South Korean society, breaking the power of landed élites (although incomplete), were undertaken by the Japanese colonial government. Such a colonial legacy played an important role in the rapid postwar development of South Korea.[3] As Gi-Wook Shin argues, the "Korean 'miracle' did not simply materialize due to forces operating after 1960; pre-1960 events such as colonialism, occupation, revolts, war, and reform were crucially formative, laying the ground for subsequent economic change." Shin considers "colonial industrialization and land reform to be most crucial in shaping postcolonial Korean development." [4]

Korea was first a protectorate of Japan in 1905 and then a formal colony from 1910 until 1945. Known as the 'hermit kingdom' prior to Japan's colonization, for many centuries (from 1392 to 1910), Korea had been governed under an isolationist policy by a landed aristocracy, especially the Yi dynasty, which sought to preserve its social, economic, and political privileges.[5] The king allowed access to land to his retainers, and under the *kwadon* and *rokkwa-don*, members of the royal family and retainers, the Confucian gentry, and government officials became landlords. In return, high land taxes, usually a share of the crop, were paid to the royal family. These were changed under Japan's colonial occupation.

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[3] See, for example, Jung-en Woo, *Race to the Swift: State and Finance in Korean Industrialization.* New York: Columbia University Press, 1991; Bruce Cumings, 'The origins and development of the northeast Asian political economy: industrial sectors, product cycles, and political consequences', in Frederic Deyo (ed.) *The Political Economy of the New Asian Industrialism.* Ithaca: Cornell University Press, 1987.

[4] Gi-Wook Shin, 'Agrarian conflict and the origins of Korean capitalism', *American Journal of Sociology* 103 (5), March 1998, p. 1312.

[5] James Palais, *Politics and Policy in Traditional Korea.* Cambridge: Council on East Asian Studies, Harvard University, 1975, p. 4; Paul W. Kuznets, *Economic Growth and Structure in the Republic of Korea.* New Haven, CT: Yale University Press, 1977, pp. 1-3.

In Korea, the genius of the Japanese colonial strategy was the transformation of the economy before political organization was formalized through the electoral system. The modern development program for Korea was defined by Japan's 'Agriculture First' policy, and focused on the changing the land tenure system through an extensive land survey. Richard Grabowski points out that "the lands owned by the royal household and uncultivated land were turned over to the government for sale to Japanese companies and landlords." Having formal titles to their land, the nobility were required to pay the new land tax based on the assessed values from the land survey conducted between 1910 and 1918.[6] Surplus extraction was through the land tax levied on farmers, and because of this landowners were forced to develop the land, and as the land tax was fixed, surplus production became added income for farmers, and this provided incentives for the expansion of agricultural production. Agrarian capitalism was promoted as land could now be bought and sold and more households were forced to sell some of their output, and as the government also institutionalized technological innovation in agriculture, built roads, railroads and harbour facilities.[7] Grabowski argues that during the colonial period "significant investments were made to expand productivity" and enhance the agricultural surplus. He asserts that the structural changes introduced were no less significant in the nation's postwar development because the colonial government had "reduced the power of the rural elite" who prior to the colonization "possessed so much power" and chose "short-run extractive strategies." Shin points out that "the method of surplus extraction by the Korean rural elite prior to colonization was one that was regressive" or in

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[6] Richard Grabowski, 'Peasant agriculture and the distribution of power in prewar East Asia', *Canadian Journal of Development Studies* 15 (2), 1994, p. 184.

[7] Ramon Myers and Saburo Yamada, 'Agricultural development in the empire', in Ramon Myers and Mark Peattie (eds.) *Japanese Colonial Empire, 1895-1945*. Princeton: Princeton University Press, 1984, p. 444.

Grabowski's words "extractive ... where surplus is extracted with little invested into agriculture" to increase productivity and production through new technology or new methods of land management. In addition, bribery in the bureaucracy was widely practiced by the landed class to avoid progressive taxation.

By contrast, Japan's policies were "developmental" where resources were reinvested, thus paving the way for "the long-run, growth oriented, cooperative solution." [8] Certainly, these policies were not an act of altruism on the part of the Japanese. The colonial policy was influenced by the power relations of social forces in Japan. As Japan was on its path to rapid industrialization so also was the struggle waged between Japanese farmers and government-industry interests. But the "voices for securing cheap rice for cheap labor were equally strong", thus Yujiro Hayami argues that although "the rice terms of trade (the price of rice divided by the general price index) fluctuated greatly throughout the prewar period, it was never allowed to turn against the agricultural sector."[9] The implication for this, Grabowski notes, was that "the power of Japanese farming interest... had prevented the pursuit of an extractive strategy with respect to farmers in Taiwan and Korea." An extractive strategy would have reduced the relative price of rice in the colonies, but this was prevented effectively.[10]

Korean agriculture consequently prospered, especially through most of the 1930s, indicating high productivity and resembling agricultural development in Taiwan and Japan.[11] The colonial government built infrastructure facilities and introduced technological innovation through the establishment of experiment stations, and later the Agricultural Technology Bureaus (in 1912) were promoted to develop agricultural production in the provinces. In the 1920s livestock cooperatives for the export of livestock were established and dairy processing technologies were introduced, but the economic hardships of the Depression saw most of the cattle slaughtered for food and processing facilities destroyed. The industry had grown and reached a peak of 1,703,000 heads in 1936, but by 1944 there were only 887,000 heads and this dropped further to 600,000 by 1945.[12] The growth of Korean agriculture was low from 1920 to 1930, and in fact productivity fell during the period. The rapid growth of rice exports, combined with slow growth in production, resulted in what is now called 'starvation exports' because Korean farmers had less and less rice to consume. Grabowski argues that the Korean experience under the Japanese colonial government was more or less similar to Taiwan's, but the former's economy was much less commercialized because of a lack of basic infrastructure necessary for growth.[13] As a result, Japan launched a program aimed at increasing productivity through investments in irrigation systems and rural infrastructure, distribution of seeds, and development of extension systems for knowledge sharing. Similar to Taiwan, in South Korea tenancy continued to prevail throughout the colonial period. In fact, by the time the cadastral survey was finished in 1918, 77 percent of the rural population leased part or all of its land, and the landlords "not only benefited from

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[8] Shin, 'Agrarian conflict', p. 1320; Grabowski, 'Peasant agriculture', p. 185.

[9] Yujiro Hayami, 'Rice policy in Japan's economic development', *American Journal of Agricultural Economics*, 54, 1972, pp. 19-31.

[10] See also Kym Anderson, 'Growth of agricultural protection in East Asia', *Food Policy* 8, November 1983, p. 331.

[11] Sung Hwan Ban, 'Agricultural Growth in Korea, 1918-71', in Yujiro Hayami et al. (eds.) *Agricultural Growth in Japan, Taiwan, Korea, and the Philippines.* Honolulu: University of Hawaii Press, 1979, pp. 90-

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116; Gi-Wook Shin, *Peasant Protest and Social Change in Colonial Korea*. Seattle: University of Washington Press, 1996; Sang-Chul Suh, *Growth and Structural Change in the Korean Economy, 1910-1940*. Cambridge, MA: Harvard University Press, 1978.

[12] Daniel Pinkston, 'The evolution of South Korea's rural institutions: the political economy of export promotion and market protection', *Journal of East Asian Studies* 7 (1), January-April 2007, p. 63.

[13] Grabowski, 'Peasant agriculture', p. 184.

increased commercialization and growing rice exports to Japan, but often actively collaborated with or at least passively supported Japanese colonialism.[14]

The separate works of Sang-Chyul Suh and Ramon Myers and Saburo Yamada documented the growth in agriculture to be neither a result of increase in land nor labor. Rice production in Japanese Korea (e.g. 1910-1940) gave a respectable yearly growth of 2 percent as a result of increased productivity. [15] Thus, Atul Kohli strongly suggests "that growth must have resulted from increased productivity."[16] This growth in productivity was a reflection of the Japanese government's deliberate promotion of irrigation, improved seeds and the use of fertilizer. While we can argue that this was not motivated by Japanese altruism , the unintended beneficial consequence to Korea was "the productivity-led agricultural growth." In other words, it was a technology- and innovation-based production, "a Meiji state agrarian policy" that the Japanese introduced in Korea which set the path of modernization of the Korean economy. In the words of Myers and Yamada, "a modern agricultural revolution began to take place …and we can say [that] this was the first example of modern agricultural development in Asia."[17] This is "nearly unique in the history of colonialism", especially when we look at it against the backdrop of Spanish and American colonialism in the Philippines. Thus, Kohli asserts, "this experience set Korea (along with Japan and Taiwan) apart from much of Asia – not to mention other parts of the developing world – and must be taken into account as a contributing factor in that country's subsequent economic dynamism."[18]

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[14] Shin, *Peasant Protest,* p. 51.

[15] Suh, *Growth and Structural,* p. 444.

[16] Atul Kohli, 'Japanese colonialism and Korean development: a reply', *World Development* 25 (5), 1997, p. 883.

[17] Myers and Yamada, 'Agricultural development', p. 446.

[18] Kohli, 'Japanese colonialism', p. 883.

As it turned out, the developmental policy in the agriculture sector eliminated, to a certain degree, the local élites' material interest based on land, and gave them a better incentive to focus investments in non-agricultural enterprises. This capital movement from land to commercial and industrial activities was salient to Korea's industrialization because these Korean- landlords- turned-capitalists participated substantially during the colonial industrialization with most of their investments in family-owned small firms.[19] Some explained this movement of capital as largely due to increasing colonial agrarian conflict which encouraged landed elites to seek for alternative avenues of capital accumulation. Tenancy disputes in Korea dramatically increased between 1920 and 1932 at 4,804 disputes involving 74,581 tenants as the commercialization of agriculture expanded and the high productivity programs of the colonial government were implemented.[20] The landlords in Korea positively responded to colonial promotion of industrialization. Moreover, the colonial government's policy which tended to favour the peasants over the landlords contributed to this movement of capital. William Langdon wrote "with the landlord's rights curbed and the tenant's rights extended [by the ordinances], no doubt land will lose some of its attractiveness as an investment, diverting capital and savings to manufacturing and other industrial lines." [21] Grabowski argues that as the power of the landlord over the peasant was decreased by policies that empowered the peasants, the landlord's power to use "extra-economic compulsion to extract surplus from the peasant" was lessened and this increased the "peasants' mobility".[22] Having been transformed as tenant-farmers with predictable and monetized rents, the tenant-farmers had incentives to acquire skills and use new technologies to increase productivity and income. Between 1930 and 1942, the number of landlords with over 100 *chongbo* decreased from 800 to 448, and those between 50 and 100 *chongbo* from 1,438 to 1,351.[23] Clearly, Japanese policies 'diverted' the Korean élites' interest from land.

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[19] Shin, 'Agrarian conflict', p. 1316- 17.

[20] Richard Grabowski, 'East Asia, land reform and economic development', *Canadian Journal of Development Studies* 23 (1), 2002, p. 119.

[21] William Langdon, 'Tenant Farmer Legislation-Chosen Agricultural Lands Ordinance', in *Records of the Department of State Relating to Internal Affairs of Korea (1930-39)*. Microfilm. National Archives, Washington, D.C., 1934, p. 3. A series of laws such as the Tenant Arbitration Ordinance and the Agricultural Lands Ordinance show that the colonial government changed its agricultural policy in favour of peasants. The laws restricted the landlord class. Change in the colonial policy made some landlords look for new avenues for investment. For example, a landlord in Kanghwa island sold his land to establish the Choyang Spinning and Weaving Company in 1936.

Korea's industrial development during the colonial occupation can be divided into three more or less distinct phases. The first phase made Korea a market of Japan's manufactured goods.[24] Consequently, restrictive policies were imposed, such as the Company Regulations Law which encouraged Koreans to operate only small-scale, craft-type industries utilizing local raw materials (often called household industries, employing 10-20 workers), such as metals, dyeing, papermaking, mats, lacquerware, bambooware, traditional alcoholic beverages, animal oils, and rice milling.[25] But when Japan became a creditor nation after World War I and as Japanese companies made huge profits, the Japanese imperial government sought expansion of investment of Japanese capital overseas, including Korea. Kohli notes that "restrictions on manufacturing in Korea were abolished and thus began a second phase in Korean industrialization."[26] Moreover, the March First Movement in 1919 undoubtedly displayed Korean nationalism, thus while the government's Agriculture First policy was still in effect, Japanese colonial authorities pursued a less restrictive industrial policy toward Korea.[27] As a result, the Company Regulations Law was relaxed, requiring new corporations to register with, rather than obtain permission from, the government. This encouraged the growth of local business enterprises (or 'household enterprises), and from a base of 39 firms in 1919 the number rose to 2,457 by 1927, although Korean-owned 'factories' were extremely small, poorly financed and technologically backward.[28]

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[22] Richard Grabowski, 'Economic development and feudalism', *The Journal of Developing Areas* 21, January 1991, pp. 192-193.
[23] Shin, *Peasant Protest*, p. 133.
[24] Atul Kohli, 'Where do high growth political economies come from? The Japanese lineage of Korea's 'developmental state'', *World Development* 22 (9), 1994, p. 1279.
[25] Timothy Lim, 'The origins of societal power in South Korea: understanding the physical and human legacies of Japanese colonialism', *Modern Asian Studies* 33 (3), July 1999, p. 618.
[26] Kohli, 'Where do high growth', p. 1280.

The growth of these small firms was supported by "several underlying trends", including rising income of the people, and a rapidly growing Japan. Young-Iob Chung points out that Japanese factories served as innovators and were followed by a "cluster" of Korean imitators, and forward and backward linkages were created by Japanese investments.[29] The Japanese, Kohli argues, co-opted some wealthy Korean businessmen, and were allowed to enter medium to large-scale trade and manufacturing. The colonial policy further changed in the 1930s as the plan was designed to foster rapid industrialization. The colonial government was faced with several challenges with the world economy in depression, rice overproduction in the colonies, and the necessity to develop the colonies as quickly as possible for Japan's imperial expansion. Rapid industrialization of the colonies was on the colonial power's agenda, and this meant for Japan's large conglomerates to accelerate expansion into Korea in heavy industries.[30] When the Japanese left, "a small group of native Korean capitalists" monopolized and controlled most major industries in the South Korean economy. It gave rise to a very influential and exclusive group of local industrial capitalists.

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[27] Lim, 'The origins of societal power', p. 617.

[28] Suh, *Growth and Structural Changes*, p. 102.

[29] Young-Iob Chung, 'Japanese investment in Korea, 1904-45', in Andrew Nahm (ed.) *Korea Under Japanese Rule*. Center for Korean Studies, Western Michigan University, 1973, p. 93, cited in Kohli, 'Where do high growth', p. 1280.

[30] Ibid., p. 609-612, 622,

Moreover, Japanese textile companies left behind extensive facilities which comprised the bulk of South Korea's domestic cotton spinning industry. There were 248 textile-related (e.g. silk, wool) factories (all but 21 of which were located in South Korea), 228,248 spindles and more than 7,700 looms that were left behind by the Japanese. Considering the amount of physical industrial infrastructure left by the Japanese, Lim argues, "it is not difficult to understand why former Japanese-owned factories played a role in the early development of so many of South Korea's largest businesses." Lim maintains that because many of these enterprises (mostly not politically connected) flourished, there were some level of skills and know-how inherited by the Korean industrialists, particularly in the textile industry. He points out that the Korean textile industry grew and by early 1950s just before the Korean War the yearly output reached a respectable 28.2 million pounds for cotton yarn and 64.2 million square yards of cotton cloth. This volume of production was sufficient to meet domestic demand, and by 1949 Korea's textile industry expanded with a total of 304,500 spindles and 9,000 looms. Lim argues that "the physical and human legacies of colonialism constituted a significant and enduring 'inheritance' to South Korea." He shows that "virtually *all* of Korea's most successful capitalists/entrepreneurs (at least prior to 1960) developed and honed their skills during the colonial period."[31] This is in stark contrast to the Philippines, where colonial industrialization was something that could only be dreamed of for Spanish and American Philippines. Kohli argues that "the extent of Korea's industrialization during the colonial phase was both considerable and nearly unique in the comparative history of colonialism."[32] He maintains that South Korea did not inherit an industrialized economy given that the physical industrial infrastructures were destroyed during the Korean War. But he is of the opinion that even if these physical structures were destroyed, "the legacy of 'ideas' was substantial". In other words, having a developmental mindset that puts technological innovation at the centre of economic development is a tremendous legacy of Japanese colonialism to the Koreans. This is made quite obvious when the Korean experience is compared with the Philippines where such a mindset was never 'created' among the political and economic elites.

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[31] Ibid., p. 621

The Japanese legacy in Korea besides a modern economy was a modernized political apparatus, and this had a huge impact on the strategy that was adopted in the 1960s which saw Korea's economic take-off. Japan transformed a traditional society into a modern polity, replacing the dynastic rule of the aristocracy with a modern, highly centralized, and extremely capable state apparatus, one which was used to reshape the Korean economy, during the 35 years of colonial rule.[33] Atul Kohli points out that the highly centralized bureaucracy inherited from Japanese colonial officials made sure that the objectives of government were carried through, and that "lower level officials respond mainly to those above them in bureaucratic hierarchy, rather than to personal interests, or to the interests of societal actors with whom they interact."[34] This new and highly disciplined Korean civil service had extensive and intensive bureaucratic reach. Corrupt lower ranking officials became better paid, especially their "entertainment allowance", or they were allowed less discretion and subjected to more rule-governed behaviour to discourage corruption. Symbolism creating state-society separation and emphasizing "the will of the state" was established by requiring "state officials and bureaucrats to wear crisp uniforms, replete with swords to make them distinguishable from the average citizen."[35] Jung-en Woo argue in *Race to the Swift* that Japan left Korea a legacy of a developmental political apparatus capable of formulating and implementing 'planned capitalism' which underpinned Korea's rapid economic rise in the 1960s. Moreover, unlike in the Philippines, the holding of election at a later time after a modern bureaucracy was created prevented the landed aristocracy from dominating Korean politics. Consequently, feet-dragging among landed politicians in any sort of reform of the land tenure system was prevented in Korea.[36] In the Philippines, the landlord politicians have curtailed the development and implementation of agrarian reforms.

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[32] Kohli, 'Where do high growth', p. 1279, 1291.

[33] See Ramon Myers and Mark Peattie (eds.), *The Japanese Colonial Empire, 1895-1945*. Princeton, NJ: Princeton University Press, 1984.

[34] Kohli, 'Where do high growth', p. 1273.

Kohli argues that "Japanese colonialism in Korea helped establish some basic state-society patterns that many now readily associate as integral to the later South Korean 'model' of a high growth political economy."[37] I argue that it is the legacy of 'developmental ideas', particularly the proclivity of politicians and bureaucrats to develop a production-oriented economy, which was the defining factor for Korea's postcolonial development. The continuity of developmental ideas from the colonial to the postcolonial periods has been shown by many scholars. Edward Mason and his colleagues, for example, showed that when South Korea's rural extension system was rebuilt in the late 1950s, "it was rebuilt on the old foundations and in the same location in the city of Suwon", and farmers continue using fertilizers and improved plant varieties.

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[35] Ibid., pp. 1273-1274.

[36] Cristobal Kay, 'Why Asia overtook Latin America: agrarian reform, industrialisation and development', *Third World Quarterly* 23 (6), December 2002, p. 1076.

[37] Kohli, 'Where do high growth', p. 1285.

This becomes major sources of productivity growth.[38] Robert Wade also documented the continuity of ideas in managing the irrigation system. [39] This mindset was especially manifest in the nationalist Park administration during the postcolonial period. Daniel Pinkston points out that Park Chung-Hee "was very cognizant of the linkages between agriculture and industry, and he targeted the rural sector for development as part of his industrialization strategy." President Park stated:

> More than anything else, Korea's late development has been due to backwardness in agricultural production and insufficient food supplies. Agriculture has not been able to provide the essential raw materials for industrialization, and the paltry incomes of farm households are the cause of extremely depressed markets for industrial goods. Therefore, industrialization is impossible without agricultural development; it is a precondition for the normal development of an industrial base.[40]

Stephan Haggard, David Kang and Chung-in Moon criticize revisionist interpretations of the Japanese colonial legacy, and downplay the suggestion that Japanese colonialism was a unique development that helped pave Korea's foundation for subsequent economic dynamism.[41] But as Kohli asserts, the rapid recovery of South Korea after the Korean War tells us that 'knowledge' or ideas play a significant role in industrialization. He made the point that "even if most factories were destroyed during the Korean War, the knowledge of industrial technology and management, as well as experience of urban living, a modern educational system and the skills of workers survived, leaving a positive legacy for postwar liberalization."[42] Indeed, the 'developmental mindset' was a legacy that is more enduring. This mindset strove to define the modern postcolonial Korea society. Unlike the Philippines, Korean nationalism was not 'diminished' or 'unformed' during the Japanese colonial occupation. If anything, the Japanese colonial legacy helped to strengthen the resolve of the Korean political, economic and intellectual leadership to build a strong and prosperous Korea by having socialized the Korean bureaucrats on the principles and practices of modernizing a nation.

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[38] Edward Mason et al. *The Economic and Social Modernization of the Republic of Korea.* Cambridge, MA: Harvard University Press, 1980, p. 82.

[39] Robert Wade, *Irrigation and Agricultural Politics in South Korea.* Boulder, CO: Westview Press, 1982.

[40] President Park's Instructions: A Meeting with Provincial Governors, *The Cooperative News*, August 31, 1964, quoted in Pinkston, 'The evolution of South Korea's', p. 65. Park's military government promulgated the Agricultural Product Price Support Law in 1961 to "maintain appropriate agricultural prices with the objective of raising production and providing economic stability for the agricultural sector." Pinkston points out that "the law gave the government extensive powers to intervene in the market and reverse the low-price food policy of the First Republic." Although the law was designed to provide price support, ultimately the goal was to encourage agricultural production for exports by guaranteeing farm loans, and providing subsidies. In 1961 a companion Export Cooperatives Law was passed to encourage "cooperative efforts in international marketing and prohibited noncompetitive or exclusionary practices among South Korean producers in exporting." This encouraged the formation of many agricultural fisheries, and livestock export cooperatives in the 1960s." (Ibid., p. 62-67).

[41] Stephan Haggard, David Kang and Chung-in Moon, 'Japanese colonialism and Korean development: a critique', *World Development* 25 (6), 1997, pp. 567-881.

7.2 Korean nationalism and the making of 'Asia's next giant'

Tae-Gyun Park argues that "the power of ideas and consensus among intellectuals and policymakers played great roles during the economic development process" of South Korea. This created "not only the basic condition to design and carry out the economic development plans, but also the character of the development in South Korea".[43] Park points out that bureaucrats, economists, politicians, and journalists "played crucial roles in spreading and creating the social discourse that was necessary for the country's directed economic growth." Moreover, Park asserts that these Korean social forces "influenced the US government to change its own policy towards South Korea in the early 1960s": "In many documents from the late 1950s, it is shown that US Embassy officials in Seoul emphasized the necessity of an economic development plan along with the formation of personnel who would be able to design and carry it out." [44] Ahn Jae Hong, Director of the Interim South Korea Government, under the US Military Government, argued that "it would be necessary for Korea to make its economic system a mixture of capitalism and socialism." There was overwhelming support (70 percent) for "socialism" among the Korean people as revealed in a public opinion poll in 1946 and 1947. From this same poll 71 percent preferred the People's Committee led by the KCP (Korean Communist Party) to the existing administration created by the US Military Government.[45]

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[42] Kohli, 'Japanese colonialism', p.884.

[43] Tae-Gyun Park, 'Different roads, common destination: economic discourses in South Korea during the 1950s', *Modern Asian Studies* 39 (3), 2005, p. 680.

While there was agreement that economic planning was essential for Korea's development, there were three sources of ideas as to the strategy that would have to be adopted: laissez faire, guided capitalism, and social democracy. 'Laissez faire' was focused on economic stabilization through the so called 'anti-inflation' measures, free market system, less government controls. This idea was backed by the US government. 'Guided capitalism', Park notes, "emphasized that the government should strongly control the entire economic process and that it was possible for underdeveloped countries to accelerate the speed of their economic growth through mobilization of national resources by the state."' This group was influenced by Raul Prebisch's theories and also Myrdal's theory on independent national development, and used 'economic nationalism' and 'intensive industrialization' capped in one word as "Koreanism", which gave priority to a conglomerate (*chaebol*) system. This group understood that the concept of modernity was "the hybrid of traditional culture and western rationalism, and they believed that modernization meant structural reform or a revolution that permeated all of society." These intellectual scholars were educated in Japan, such as Waseda University.[46] This group advocated for a social security system, and strong state intervention in the economy. The third group, 'social democracy', covertly recognized the superiority of the Soviet 'planned economy'.[47] It was 'guided capitalism' which was adopted by Pak Jeong Heui's regime shortly after the coup in 1961. These advisers to the Korean government were called 'back-room boys' by the US. The US was strongly opposed to the junta's economic development plan of 1961 so that this was revised in 1964: "The US emphasized the role of private business in carrying out the plan and the inevitability of external loan, while opposing not only the import substitution strategy such as the construction of heavy industries, but also the currency reform implemented by the junta in order to accumulate domestic capital and political funds." As a result, Park notes, "South Korea's economic development plans and the South Korean economic system resulted in economic policies that were a mixture of 'laissez faire' and 'guided capitalism'".[48] South Korea's postwar 'miraculous growth' was not entirely based on heavy industry manufacturing but on "the linkages between agriculture and industry", as discussed earlier.

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[44] See, Tae-Gyun Park, 'Changes in US policy toward South Korea in the early 1960s', *The Journal of Korean Studies* 23, 1999, pp. 106-109.
[45] Park, 'Different roads, common destination', p. 664.

Confucianism has often been evoked to support East Asian or Korean development. The explanation has posed two arguments.[49] First, that "Confucianism has enabled East Asian countries to take a different type of capitalism and a different path to modernity than did the West", and, second, that it "has been the source of those ethics such as activism, hard work, thrift, and the like that have been conducive to economic development in East Asia". Many scholars argue that these ethical ideals were primarily modernization projects of the state. Ideas are historically conditioned. In fact it is possible to trace their origins because they have not always been represented in that way in the past. As human ideas become the basis of both constitutive and regulative institutions, it is important that we question the meaning of an idea in the particular social, economic, and political circumstances in which it is put forward. Not only that, it is also imperative that we find the relationship of a dominant idea to the other social, economic, and political forces of the age in which it is developed. In this sense ideology is not taken as something mechanical or a law-like cause-and-effect issue. Mark Granovetter explains this clearly. He warns that there is a danger of "oversocialized conceptions" of how culture influences individual behaviour such that "everything else in behaviour is automatic, since they are so well socialized." Granovetter wrote:

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[46] Ibid., p. 671.
[47] Ibid., p. 672.
[48] Ibid., p. 679.
[49] See Keedon Kwon, 'Economic development in East Asia and a critique of the post-Confucian thesis', *Theory and Society* 36, 2007, pp. 55-93.

> Social influence here is an external force that…sets things in motion and has no further effects — a force that insinuates itself into the minds and bodies of individuals (as in the movie *Invasion of the Body Snatchers*), altering their way of making decisions. Once we know in just what way an individual has been affected, ongoing social relations and structures are irrelevant. Social influences are all contained inside an individual's head, so, in actual decisions, he or she can be atomized as any *Homo economicus*, though perhaps with different rules for decisions. More sophisticated (and thus less oversocialized) analysis of cultural influences…make it clear that culture is not a once-for-all influence but an ongoing process, continuously constructed and reconstructed during interaction. It not only shapes its members but also is shaped by them, in part for their own strategic reasons.[50]

Kwon argues that "the Confucian thesis does not consider such historical processes of cultural transformation driven by certain social forces", and that the "static, non-agentic view of culture can hardly do justice to the actual processes of cultural change in East Asia that may explain the region's economic success." Kwon asserts that Confucianism has undergone transformation in East Asia after the West's challenge in the mid-19th century.[51] As Confucianism "turned out to be miserably ill-equipped to confront the West's challenge, it increasingly gave way to modernization ideology as the leading guideline for national regeneration." East Asia's economic rise saw states as powerful cultural players "who can freely use the existing array of various cultural resources to guide their own actions."[52] South Korea was one of them. The state did what it did because there "Confucianism bequeathed modern East Asians ambivalent, contradictory legacies: it may have encouraged people to work hard, but at the same time despised physical labor; it definitely respected education, but simultaneously placed exclusive emphasis on the humanities." Thus, for Kwon, it is not enough to simply argue "that Confucianism contains such and such ethics favourable to economic development. What matters is to trace the processes by which certain social actors deconstruct and reconstruct a variety of heterogeneous cultural resources to establish new modes of action for economic development."

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[50] Mark Granovetter, 'Economic action and social structure: the problem of embeddedness', in Richard Swedberg and Mark Granovetter (eds.) *The Sociology of Economic Life*. Boulder, CO: Westview Press, 1992, p. 57.

The phenomenal industrial development of South Korea began in the 1960s, and the relationship between the material, political and ideological forces is well-researched.[53] I suggest that industrial development in South Korea was the result of a 'revolution from above' which initiated the successful integration by the Korean state of key forces, particularly capital and labour, and deployment of technology and the innovation-driven productive sector. The state had skilfully advanced specific ideologies that favour industrial capitalist accumulation. Andrew Eungi Kim and Gil-sung Park point out that 'nationalism' and "pro-growth Confucian values" were used by the Korean state to rationalize capitalist modernization.[54] Nationalism "informed Koreans why they should work" and Confucianism defined "how they should work", putting primacy over "labor harmony" and "subordination to authority". The work ethic ensured "the high level of work productivity by South Korean industrial workers" which "has been one of the most important factors in the phenomenal economic development of the country."[55] The authoritarian regime of Park Chung-Hee "viewed the construction of a self-sufficient national economy as the most pressing objective… [so that] the government asserted a strong central management role, leading to unprecedented government intervention in the economy and education." Given the traditional antipathy of Koreans toward manual labor and the challenge of confronting a situation completely alien to the Koreans, that is, separation from families because factories were located in urban centers, "the government exalted work to a position never before held by identifying both industrial labor and economic objectives with national aspirations."

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[51] Kwon, 'Economic development', p. 81-82.
[52] Ibid.
[53] See, for example, Byung-Nak Song, *The Rise of the Korean Economy*. New York: Oxford University Press, 1997; Alice Amsden, *Asia's Next Giant: South Korea and Late Industrialization*. Oxford: Oxford University Press, 1989.

Convinced of the social Darwinist philosophy by which the global political economy was organized, the Park regime rallied the people to support its objectives to industrialize Korea through the creation of collective and intersubjective images. These images were those of 'actual fighting', such as the notions of "trade war" (*mooyeokjeonjaeng*), "exports as total war" (*soochool chongryeokjeon*), "constructing while fighting", "industrial fighting lane" and "occupation of ten-billion dollar export hill", and "export warriors" (*soochooljeonsa*) or "industrial soldiers" (*saneobjeonsa*). Through these images the government made "the individual's commitment to industrial labor" and "the concomitant economic development…into a national campaign" through the establishment of a connection between "a concept of work with that of ethnic nationalism or *minjokjuui*, which includes, among others, the various national goals, including a defence against the communist North, a solution to poverty, and nation-state building."[56] The government also drew upon anti-Japanese sentiments inculcating a passionate determination among the Koreans to match or outdo the Japanese. Corporate slogans, such as "Let's catch up with Japan", "Let's surpass Japan" and "Let's beat Japan" were ubiquitous.[57] Kwon could no less agree. Criticizing the post-Confucian cultural explanation of East Asia's economic rise, Kwon argues that "those supposedly Confucian virtues can be better seen as the products of the states' social engineering for modernization and economic development".[58] By analyzing the 'New Community Movement' in the 1970s in Korea, Kwon argues that the above arguments "are misleading" inasmuch as this campaign "attacked and rejected many important doctrines of Confucianism." At the rhetorical level, Confucianism was present, but Kwon thinks that it "was not so much the agent of modern transformation as the object thereof", and that those "economically favourable ethics" are products of the Korean state's "socio-cultural engineering for economic development". Kyu Han Bae and William Form point out that Korean firms have "a mixture of indigenous, Japanese and Western practices", thus, the payment system of Korean large firms is located "somewhere between Japan's

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[54] Andrew Eungi Kim and Gil-sung Park, 'Nationalism, Confucianism, work ethic and industrialization in South Korea', *Journal of Contemporary Asia* 3 (1), 2003, p. 39.
[55] Ibid., p. 37.

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[56] Ibid., p. 41.
[57] Ibid., p. 42.
[58] Kwon, 'Economic development', p. 55, 57.

nenko [seniority] system and the western market system",[59] and the Confucian ethic of authority had "at best only an indirect impact."[60] Kwon notes that in an analysis by Byung-Joo Lee and Mary Lee in 1998 of the Korean workers' income, "workers reach their peak earnings at as early as age 30-38, a curious finding that cannot be explained by seniority alone" and that the Korean employment system has begun to move rapidly…toward a more flexible system in the course of adopting neo-liberal economic policies after the exchange crisis in 1998"; moreover, "early retirement has become a common phenomenon among white-collar salaried workers" where the "average retirement age of Korean workers is about 45, the earliest among the OECD members."[61]

A salient feature of Korea's modernization process is that the state launched various campaigns for social and economic development. These were started as soon as Park Chung-Hee took power in 1961, with the People's Movement for National Reconstruction, followed by the New Community Movement in 1971 and the New Mind Movement in the late 1970s, all aimed "to promote one of those supposedly Confucian virtues."[62] Under the New Community Movement, the idea of "management familism" which is basically the notion of "My company is my home or my family" was promoted, but as Kwon points out, this was never heard of in Korean industry until the 1970s when the state-sponsored Factory New Community Movement began in earnest because of rising industrial disputes which culminated in the 1987 large-scale democratic struggle of Korean workers against "repressive, authoritarian treatment" characterized by "militarycamp style of labor control."[63] The Korean state tried to emulate Japan where "class conflicts conjured up familism", but Kwon believes this was not be as successful as in Japan "because Korea's labor movements, especially in some key industries like automobiles and in large enterprises, have been well known for their unremitting militancy." Thus, for Kwon, the evolution of the Korean employment system refutes the post-Confucian thesis.[64] Kwon asserts that "under the Confucian guise", the Korean state actually was "the primary agent" of the socio-cultural transformation for economic development; the state "engineered" the whole process. It began when communities were enlisted to improve their community through projects such as street-widening using the huge volume of cement produced by state-owned factories. The Korean "farmer's response was extremely enthusiastic", and this inspired the government to establish the government-systematized New Community Movement by establishing the Training Institute for Diligent Farmers in 1972 which was later changed to the Training Institute for New Community Leaders in 1973. The New Community Movement "provided peasants with various instructions about how to modernize farm villages" or how to establish a "new community" (*samaŭl*), fully supported by the government-owned broadcasting company, KBS.

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[59] Kyu Han Bae, 'Labor strategy for industrialization in South Korea', *Pacific Affairs* 62 (3), 1989, p. 359.
[60] Kyu Han Bae and William Form,'Pay strategy in South Korea's advanced industrial sector', *American Sociological Review* 51 (1), 1986, p. 130.
[61] Kwon, 'Economic development', p. 65.
[62] Ibid., p. 67.

The official goals of the New Community Movement were: first, "to achieve spiritual enlightenment featured by diligence, self-help and cooperation", second, "to achieve higher productivity"; third, "to improve rural circumstances"; and fourth, "to bring about technological revolution in agriculture."[65] That the South Koreans have a propensity to save and to rationalize their daily life was not necessarily because of a

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[63] Ibid., p. 66.
[64] Ibid.
[65] Ibid., pp. 68-69.

Confucian ethic. In Korea, Park's regime held in contempt "the Confucian gentlemen in the Chosŭn dynasty and their contemporary spiritual posterity" because "not only did they not deeply reflect upon the practical problem of improving the material life", they "also took pride in poverty handed down from thousands of years ago by calling it honourable poverty." Thus, the Park government, especially in the recession of the 1970s, made a campaign "that placed a renewed, stronger emphasis on thrift, diligence, and savings", touching on Korea's "traditional culture, attacking some Confucian customs and many superstitions." The Park government established a law that dealt with family rituals such as weddings, funerals, ancestor-worship ceremonies, etc., and the aim was "to simplify the rituals and eliminate their 'wasteful' and extremely inconvenient procedures."[66] The effect on savings of all these campaigns was enormous. Kwon shows that "savings rated in the closing years of the 1970s even surpassed their levels at the earlier peak in the late 1960s. Given that the Korean economy deeply suffered from the second oil shock in the late 1970s, the dramatic increase of savings rates from 17.5 percent, 18.6 percent and 16.6 percent for 1968, 1969, and 1970, respectively, to 33.5 percent in 1976, 29.6 percent in 1977, and 27.7 percent in 1978 can hardly be explained by an economic logic alone.[illegible] State-led campaigns in regard to the "ethic of hard work", "activism", "autonomy", and "self-help" were successful in creating the New Community Movement's overall aim to create a "new man": "It is essential and only natural that *Saemaul* education initially is conceived as a means to a 'better life', to create a new person, or at least a modern man out of a traditional and poor farmer or urban labourer." This new man is conceived by the New Community Movement to be independent, creative, pioneering, cooperative, and practical. This was Park's long-held vision of Korea's modernization: a "human revolution" or "modernization of man".[68]

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[66] Ibid., pp. 78-79.
[67] Ibid., p. 80.

7.3 Technology and innovation strategies

The following discussion compares strategies to build technological and innovative capabilities in semiconductor and electronics manufacturing in South Korea and the Philippines. The propensity to deploy technological innovation to build a particular industry was evidence of a modern Korean state. Korea's electronics sector is one of the world's leaders as far as development of innovative electronic products is concerned. For developing countries such as the Philippines, capability in in-house manufacturing R&D should be developed because this will provide the synergy that the agriculture sector needs, as manufacturing is a production-focused economic activity. Of course, commerce and the service sector are needed, but their role should be one of a support to production. This strategy is important for an economy like the Philippines which has a huge rural population .

Given that the focus of any strategy should be the production sector, I argue that the lack of in-house R&D and the failure to learn from imported technologies are at the root of the problems in the Philippine manufacturing sector. These deficiencies have resulted in a fragmented knowledge- production-utilization structure in the country. To substantiate this claim, I examine the in-house research situation, the technological capabilities, and configuration of institutional structures in the Philippines compared to South Korea. In competitive economies, a functional system of innovation to facilitate the development and utilization of technology and innovation in the economy exists. Gregory Tassey argues that economic institutions, such as the financing and actual conduct of manufacturing R&D, the integration of the results of R&D into production systems, and the provision of skilled labor are all important in a competitive economy. But he also recognizes that these institutions "are not easily established – or imitated." [69] David Mowery underscores the importance of materials analysis and quality control laboratories that mushroomed between 1900 and 1940 in the US.[70] These factory-level laboratories were "the first employers of research scientists and engineers", and were gradually replaced by "laboratories devoted to long-term research." By 1946, these laboratories employed more than 5,000 scientists and engineers, and this number rose from 25,000 or so in 1958 to over a million in 2007 in the US.[71] A narrower definition suggests that industrial research includes only basic and frontier research.[72] When the objective of R&D is economic growth, business firms are in the best position to meet this criterion within a market economy.[73] Firms are central to competition, innovation and productivity—processes which are at the root of exports and wealth creation.[74]

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[68] Ibid., p. 71.

Industrial research (I prefer 'in-house R&D'), according to Charles Larson, has undergone major changes through the years. In an era "when innovation was nearly always perceived as a linear process", the strongest interest in creativity was focused on

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[69] Gregory Tassey, 'Policy issues for R&D investment in a knowledge-based economy', *Journal of Technology Transfer* 29 (2), April 2004, p. 157.

[70] David Mowery, 'The development of industrial research in US manufacturing', *The American Economic Review* 80 (2), May 1990, pp. 345-346.

[71] Charles Larson, '50 years of change in industrial research and technology management', *Research Technology Management* 50 (1), January-February 2007, p. 29.

[72] Leonard Reich, *The Making of American Industrial Research*. New York: Cambridge University Press, 1985, pp. 1-11.

[73] Ibid., pp. 9-18.

[74] Michael Hobday, *Innovation in East Asia: The Challenge to Japan*. Cheltenham, UK and Lyme, US: Edward Elgar, 1997.

"internal rather than external operations." The idea was one that is captured in this short statement: "the biggest gamble in business is to do no research at all."[75] From the mid 1960s, ideas shifted to "the management of R&D, technology and innovation" as the challenge of managing the innovation process received increasing attention: "R&D began to work more closely with manufacturing and marketing, leading to more team-based innovation process." The relative importance of market-pull and technology-push in innovation, Larson points out, began to be the overarching theme of numerous studies, and the notion of "accessing external technology now known as 'open innovation' became prominent. Accordingly, the "traditional R&D laboratory is no longer an essential element in the firms' innovative strategy or organizational structure" because "high-quality R&D can be done all around the world, resulting in a proliferation of new R&D labs in many countries, notably China and India. Henry Chesbrough, for instance, discussed the achievements and limits of "closed innovation" and presents a business model that connects internal and external innovation. IBM is an example of a company that has moved from closed into open innovation.[76] Larson further notes the major changes in the 1990s as service R&D and innovation led the way in the information revolution. The US is leading in this sector, and process R&D and innovation led to the creation of rapidly growing new firms such as Amazon, eBay, Yahoo!, and Google, plus the supply-chain management, epitomized by Wal-Mart.

Nonetheless, as Tassey argues, to stay on top of the game in service industry, advances in manufacturing R&D and innovation are essential. The same concern is expressed by A. Michael Noll alluding to the detrimental impact of the dominance of financial capital which "love the cost savings from the closures and cutbacks", thus, "much of the research had become focused on shorter term practical business-related problems" that have resulted in the loss of industrial researchers.[77] Where short-term profitability is preferred, "the support for basic research in industrial labs is now seen to be an exorbitant luxury." This, he said, is "a dangerous development" because while revenues in service-oriented industries such as telecommunication do not come from a manufactured equipment (or hardware) but from services, yet their long-term future depends on innovations in the hardware. Thus, he argues that service providers should support basic research. A synergy between IT-based service and manufacturing industries is necessary for long-term growth. Noll argues, however, that this problem is not new. He quotes William O. Baker, who led the research division of Bell Labs between 1955 and 1979 and who advised many presidents of the US:

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[75] Larson, '50 years of change', pp. 26-31.

[76] Henry Chesbrough, *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Cambridge, MA: Harvard University Press, 2003.

> The annual cycle, the annual report, the annual budget dominate our culture. And because it takes so long to make the transition from brainpower to really revolutionary products, Americans, not only industrialists, just think there isn't a connection. They no longer know where things come from. In fact, this enslavement to the annual cycle has actually obliterated the reflective functions of American minds.[78]

The history of the development of in-house research in the US indicates that "the structure of the institutions performing R&D matters a great deal."[79] Nathan Rosenberg argues that the in-house research laboratory made the scientific research agenda more responsive to economic factors and therefore 'endogenized' science to some degree.[80] Larson points out that "a pervasive culture of innovation has become essential for firms to compete in the global marketplace." It was reported in the April 24, 2006 *Business Week* that since 1995, the world's 25 most innovative companies achieved 3 percent higher annual median profit-margin growth than the S&P Global 1,200 firms.[81] Business companies need to undertake in-house R&D to facilitate the recruitment of potential employees, to have the ability to scan the world for new and significant scientific findings, and to support applied R&D activities aimed at generating new ideas to improve corporate products and processes.[82] There are certain necessary patterns of behaviour developed within firms and industry as a whole, that are not present in public sector-dominated research systems, and which make industrial research more effective than public research. These are "constructive duplication" and "interdisciplinary structure".[83] Fusfeld points out that the high degree of uncertainty at the research stage necessitates duplication of work by several firms so that they can approach the problem from several directions, thereby increasing the probability that some of these efforts will yield successful results. Baker also made this clear when he urged that "Research must be in sufficient scale to assure that successes counterbalance failures and to permit work on concepts for which there is no immediately ascertainable application."[84] Fusfeld claims that high mortality rate is expected as firms move on to the prototype stage, and probably only about five or six out of 50 firms that started will go on to manufacturing. C.W. Mueller states that "it takes about ten times as much work to introduce a new process to a manufacturing line as it does to demonstrate that it works on a small, carefully controlled experiment in the laboratory,"[85] Fusfeld points out that each step in the four stages of industrial research, that is, R&D, design and engineering, prototype or pilot production, and full-scale production, is increasingly costly; the rule of thumb is that every US$1 spent on research requires $10 for development and engineering, and $100 for manufacturing. Moreover, the complexity of research problems requires an "interdisciplinary structure". But this is difficult to achieve in a university or public laboratory setting where institutional structures are traditionally built around separate disciplines. A corporate setting has more flexibility to respond to this need as laboratories can more easily assemble interdisciplinary teams. Furthermore, because researchers in an industrial setting are being judged on their contributions to meet corporate needs, they approach research differently to academic researchers. Confronted with complex 'real-world' problems, they combine development of theory and practice, giving them the ability to transcend the usual scientific and engineering disciplines.[86]

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[77] A. Michael Noll, 'The industrial research lab: a relic of the past?', *Nature Materials* 5 (5), May 2006, pp.

[78] William O. Baker, interview by M. Wallace, in K. Lansner (ed.) *Second Rate Brains*. New York: Doubleday News, 1958, quoted in Noll, 'The industrial research lab', p.338.

[79] Mowery, 'The development', p. 347.

[80] See Nathan Rosenberg, 'How exogenous is science' (Chapter 7), *Inside the Blackbox: Technology and Economics*. Cambridge: Cambridge University Press, 1982, pp. 141-162.

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[81] Cited in Larson, '50 years of change', p. 29.

[82] See Mowery, 'The development', p. 345-346; H. L. Beckers, 'The Role of Industry', in Herbert I. Fusfeld and Carmela S. Haklisch (eds.) *University-Industry Research Interactions*. New York: Pergamon Press, 1984, pp.143-149; Reich, 'Introduction: the importance of industrial research' (Chapter 1), *The Making of American Industrial Research*, pp. 1-11.

[83] Herbert Fusfeld, *Industry's Future: Changing Patterns of Industrial Research*. Washington DC: American Chemical Society, 1994, p. 3, 8-14.

[84] Testimony of William O. Baker, FCC Docket No. 16258, Bell Exhibit 21, dated May 31, 1966. Quoted in Noll, 'The industrial research lab', p. 338.

Scholars suggest that it is more practical for developing countries to do catch-up based on adaptive or imitative R&D in mature technologies than to undertake pioneering and exploratory research (Chapter 1). Technological learning is facilitated in adaptive or imitative research based on a mature technology, yet it is less costly and the probability of success is higher because the outcome is more certain. R&D enables firms to build "absorptive capacity"—the ability to recognize, exploit, and assimilate technologies produced elsewhere. Such capacity is anchored in practical and analytical knowledge and skills acquired through the process of learning.[87]

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[85] C. W. Mueller, 'Ion implantation –physics laboratory to factory floor', *RCA Engineer* 24, 1978-79, p. 4-9. Quoted in Hyungsub Choi, 'The boundaries of industrial research: making transistors at the RCA, 1948-1960', *Technology and Culture* 48 (4), October 2007, p. 778.
[86] Reich, *The Making of American*, p. 241-242.

Failure to develop research capabilities in local Filipino firms through in-house research has resulted in technologically-incompetent firms, stunted industries, and a fragmented innovation and production structure. Generally, technological innovation at the level of firms has not been viewed as a crucial integral facet of industrialization, in either the import-substitution or export-led periods. Investments in in-house R&D in the Philippines have been remarkably low compared to South Korea. At present, South Korea's expenditure for research in the industrial sector is a hundred times greater than that of the Philippines (Table 7-1). The overall investment situation for R&D in the Philippines is no different either. The country spent less than 1 percent of its GNP (gross national product) up to the early 1990s (Figure 7-1). South Korea caught up with Western countries in the 1990s in terms of its research expenditure (Figure 7-2). In absolute terms the Philippine R&D expenditures are far behind those of South Korea, considering that Philippine GDP is one-seventh that of South Korea (Table 7-2).

Table 7-1
Business expenditure[88] on R&D, 2001-2003 (US$ million)

	2000	2001	2002	2003
Japan	100,775	94,247	92,393	101,458
South Korea	9,070	9,514	10,372	12,183
Philippines	62	71	71	-

Source: Compiled from the IMD World Competitiveness Yearbook

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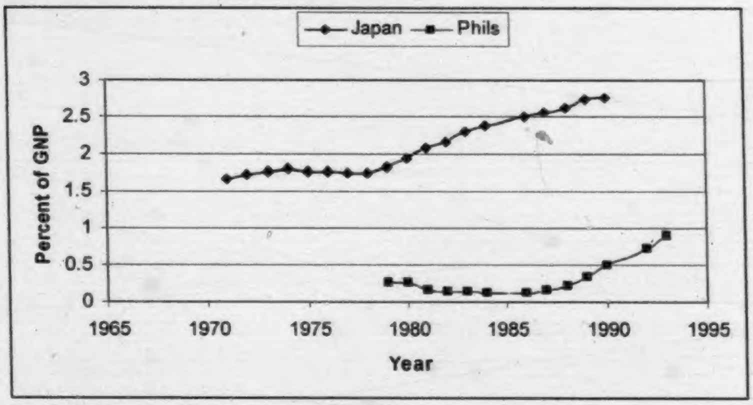
[87] Wesley Cohen and Daniel Levinthal, 'Absorptive capacity: a new perspective on learning and innovation', *Administrative Science Quarterly* 35 (1), March 1990, pp. 128-152.

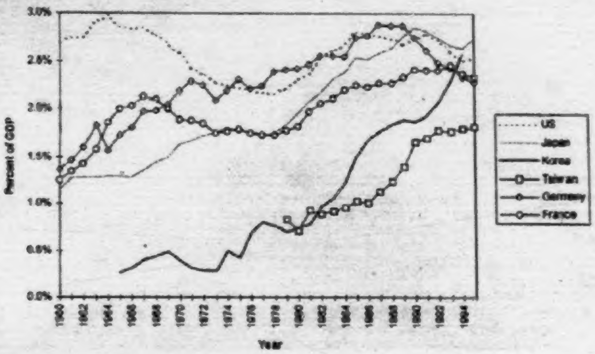
[88] Business expenditures are funds allocated to R&D by all firms, organizations and institutions whose primary activity is the market production of goods and services (other than the higher education (HE) sector) for sale to the general public at an economically significant price, and those private non-profit institutions mainly serving these firms, organizations, and institutions.

Figure 7-1
R&D expenditures as percentage of GNP



Source: Lamberte (1998, p.10); Carino (1993, p. 38); Cororaton (2002)

Figure 7-2
R & D expenditures of industrialized economies



Source: Sakakibara and Cho (2002, p.675)

Table 7-2
Total R&D expenditures (US $ million), 2002

	GDP	R&D Expenditure	% of GDP
Japan	3,907,570	124,114.21	3.18
South Korea	546,970	13,848.98	2.53
Philippines	76,810	107.00	0.14

Source: Compiled from the IMD World Competitiveness Yearbook

At a time when advances in science are playing an increasingly crucial role in developing new product ideas, the neglect of in-house research can no longer continue if the Philippines is serious about industrializing. The knowledge acquired by firms through research experience is essential for their ability to scan and copy and eventually enter emerging technology competition. It is, however, very challenging to embark on a catch-up strategy using mature technology because there is little room left for productivity, markets, and profits. But, according to Carlota Perez, it is the best starting point for creating a basic industrialization platform.[89] The effectiveness of this strategy has been demonstrated by the experiences of South Korea. The insignificant presence of this carrier industry in the Philippines combined with the failure to learn the technologies early on in the process of the country's industrialization, likely inhibited the rapid diffusion of electronics technology into the broader industry. In fact, Keiko Morisawa has argued that had the Philippines been chosen as an export platform of home appliance manufacturers in the 1970s and 1980s, the technological knowledge base of local Filipino suppliers would have been strong, and similar to Malaysia's. But because the Philippines was chosen as an export site for information electronics, such as HDDs and semiconductors, a much higher technological hurdle for local Filipino suppliers had to be overcome.[90] More significant than the absence of a carrier industry was the failure in the Philippines to recognize the importance of learning from the technologies borrowed from abroad. Even today, the propensity of most Filipino companies is to depend on imported technologies without a comprehensive approach to learning and innovating from them, as indicated in the low levels of industrial research. In fact, the patent situation in the country clearly reveals this pattern (Table 7-3). Patents granted for inventions of foreign companies located in the Philippines and local companies show that innovations are largely the domain of foreign companies. These patents are registered in the Philippines (Figure 7-3) and in the US (Figure 7-4) in order to protect their intellectual property rights in these markets. It is not surprising that the sectors where most technologies or patents were generated are the electro-mechanical industries, semiconductor devices and other electronic components industries (Table 7-4) because TNCs are mainly conducting the R&D in the Philippines in these sectors. It could also be argued that because local Filipino firms are mainly contract manufacturers, they are constrained to innovate from foreign technologies through R&D to make their own brand products. Most of the R&D activities performed in the industry are in the experimental development category (Figure 7-5).

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[89] Carlota Perez, 'Technological change and opportunities for development as a moving target', Paper prepared for the UNCTAD X High-Level Round Table on Trade and Development: Directions for the Twenty-first Century, Bangkok, Thailand, 1999. Geneva: United Nations Conference on Trade and Development, 1999, p. 4.

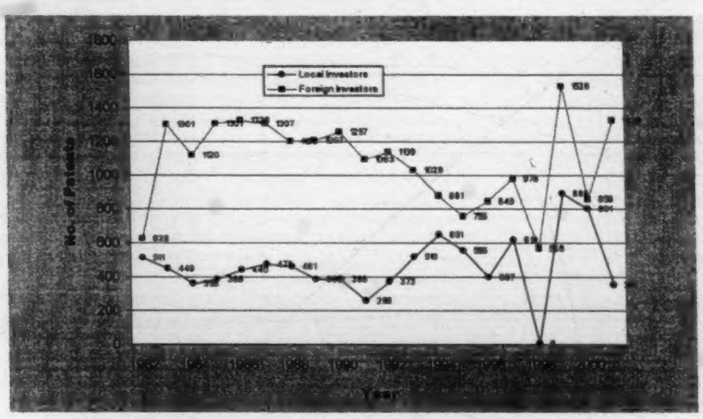
[90] Keiko Morisawa, 'The Philippine electronics industry and local suppliers: developing supporting industries through foreign capital-led industrialization', University of the Philippines School of Economics Discussion Paper No. 001, 2000, p. 6.

Table 7-3
Concentration of patents generated in the Philippines, 1978-2006

US Patent Office Technology Class Description	*No. of Patents*
257 Active solid state devices (e.g. transistors, solid state diodes)	52
438 Semiconductor device manufacturing: process	33
D10 Measuring, testing, or signalling instruments	44
123 Internal combustion engines	12
424 & 514 Drug, bio-affecting and body treating compositions	20
12 Furnishings	12
250 Radiant energy	8
324, 361 &363 Electricity: measuring & testing, electrical systems & devices, electric power conversion systems	22
426 Food or edible material; processes, compositions & products	8
510 Cleaning compositions for solid surfaces, auxiliary compositions	9
530 Chemistry: natural resins or derivatives; peptides or proteins; molecular biology and microbiology	12

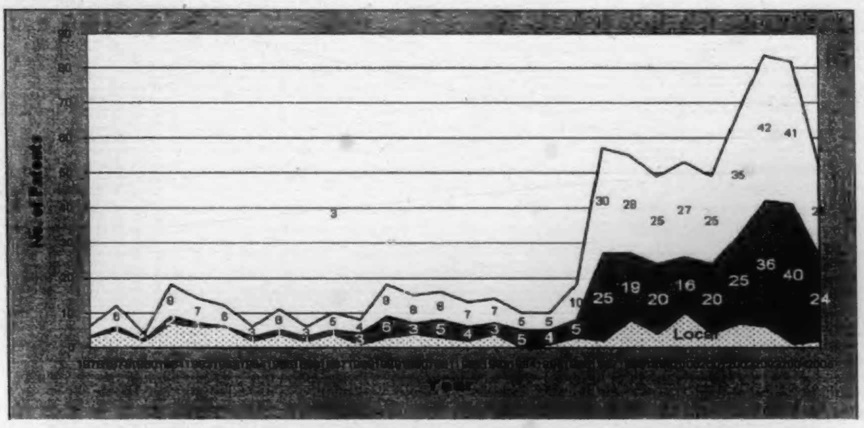
Source: Compiled from the US Patent Office

Figure 7-3
Patents registered in the Philippines.



Source: Compiled from the National Statistics Office

Figure 7-4
Patents registered in the US.



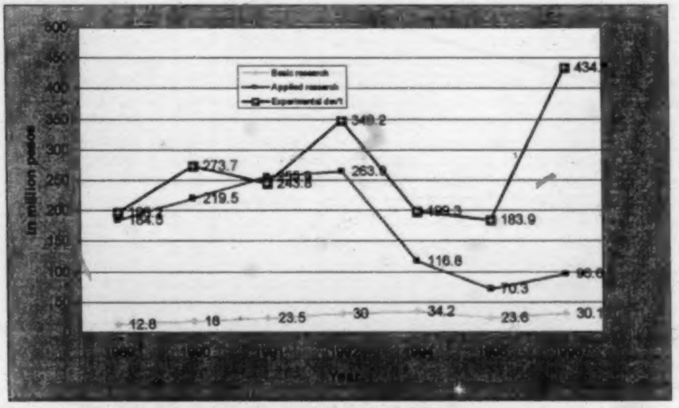
Source: Compiled from the National Statistics Office

Table 7-4
Concentration of industrial R&D in the Philippines, in thousand pesos

PSIC Code & Description		*1998*	*1999*
262	Cement	808	-
269	Non-metallic mineral production	62,708	-
271	Basic iron and steel	1,727	-
272	Basic precious & non-ferrous metals	1,538	-
273	Metal casting	8,714	-
281-289	Metal products except machinery & equipment	800	4,315
291-294	Machinery and equipment	16,067	75,522
300	Office, accounting & computing machinery & equipment	13,863 9,720	44,153 147,537
311-312	Electric motors, generators and transformers	570	34,016
313	Insulated wires and cables	2,700	9,476
314-319	Accumulators, primary cells, batteries, lighting equipment	200,597	135,639
321-323	Electronic valves and tubes; semiconductor devices & other electronic components, apparatus for telephony and line telegraphy	8,302 34,456	9,854
324	TV and radio receivers, sound or video recording	178,079	42,280
331-333	Medical precision & optical instruments, watches & clocks	12,548	188,463
341-343	Motor vehicles, trailers & semi trailers	11,550	61,337
351-359	Other transport equipment	8,927	11,508
360	Manufacture & repair of furniture	-	-
371-372	Recycling of metal & non-metal waste & scrap	8,927	-
391-399	Jewelry, musical instruments, sports goods, games & toys		

Source: Compiled from the Department of Trade and Industry

Figure 7-5
Categories of research in the Philippine industry sector



Source: Compiled from the National Statistics Office

The world-wide discernible trend in the 20th century of increasing the 'scientification of technology' required an integrated and coherent approach to technological innovation. Nathan Rosenberg points out that many of the new organizational forms for industrial research have responded to a very different trend. It has been observed in some sectors that in-house industrial research laboratory can no longer influence the direction of scientific research and thereby exploit linkages between basic and applied research effectively as before. In fact, many American firms tried to develop links to external R&D as a means of searching their technological environment more aggressively, in order to adapt to the appearance of new commercially relevant scientific and technological advances from external sources. [91] David Mowery recognizes this as well, saying that the structure of the twentieth century US R&D system of which the industrial research laboratory was a central component is changing with in-house and external industrial research seen to complement each other.[92] In fact, some studies have shown a surge of collaborative research relationships between universities and industry, but this tends to agglomerate in advanced countries, especially the US.[93] Much of the technology creation activities of large firms remain concentrated in their home economies, and this is true even in what is commonly perceived as more globalized industry, the semiconductor industry, where firms still keep their R&D largely within the country, for example, the US and a similar trend is observed with European, Japanese and Taiwanese semiconductor firms.[94]

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[91] Rosenberg, 'How exogenous is science', pp. 141-162.

[92] Mowery, 'The development', p. 348.

[93] David Mowery, 'Technological innovation in a multipolar system analysis and implications for US policy', *Technological Forecasting and Social Change* 67 (2/3), June 7, 2001, pp. 143-157; Elisa Buctuanon, 'Globalization of biotechnology: the agglomeration of dispersed knowledge and information and its implications for the political economy of technology in developing countries', *New Genetics and Society* 20 (1), April 2001, pp. 25-41.

[94] Jeffrey Macher, David Mowery and Alberto de Minin, 'The 'non-globalization' of innovation in the semiconductor industry', *California Management Review* 50 (1), Fall 2007, p. 217.

Nonetheless, companies are increasingly relying on innovative ideas generated not only inside the firm but outside of the boundaries of firms. As Mowery notes, "The structure of activity in technology development and exploitation resembles the pattern of trade in industrial manufactured goods – increased specialization in specific technologies or innovative activities that relies on a supportive national infrastructure and innovation system", giving rise to what he calls "multipolar science and technology system."[95] Industry-university collaboration has become an important concept in innovation systems. It is argued that the "actual 'give-and-take' outcomes" between the university and business firms will likely provide sustainability to the relationship, with firms benefiting from "an increased access to new university research and discoveries" and university professors' work is being complemented by increased funds for graduate students and lab equipment, and insights into their own research.[96] Public research (i.e., university and government R&D laboratory), according to Wesley Cohen, Richard Nelson, and John Walsh is critical to industrial R&D in a small number of industrial sector and importantly affects industrial R&D across much of the manufacturing sector, especially large firms and start-ups; this impact is realized through published papers and reports, public conferences and meetings, informal information exchange, and consulting.[97]

Moreover, the long-term survival and success of corporate firms has been influenced by training and development programs as needs for building and renewing technological skills and knowledge are increasingly felt. The comparative analysis performed by Elias Carayannis and Jennifer Jorge of the historical evolution and the state-of-the art in corporate- and government-sponsored training and development in the US, Japan, Germany and France shows that there are three levels of technological learning, namely operational learning, tactical learning (or learning how-to-learn from experience), and strategic learning (or learning to learn how-to-learn from experience).[98] The role of government is important in catalyzing government-university-industry linkages in knowledge-intensive clusters. For example, the development of Silicon Valley was substantially catalyzed by military spending with Stanford University and the University of California-Berkeley providing significant knowledge and human resource inputs.[99] The US Federal funding and that of the National Institutes of Health were instrumental in the emergence of a life sciences cluster in the Washington, DC area and the quality of skills and human resources in the region. Even in Japan where localized knowledge-intensive centers associated with the university are not common, informal and occasionally formal collaboration between Japan's leading universities and major corporations is widespread.[100]

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[95] Mowery, 'Technological innovation', p. 143.

[96] Yong Lee, 'The sustainability of university-industry research collaboration: an empirical assessment', *The Journal of Technology Transfer* 25 (2), June 2000, p. 111.

[97] Wesley Cohen, Richard Nelson and John Walsh, 'Links and impacts: the influence of public research on industrial R&D', *Management Science* 48 (10, January 2002, Special Issue, p. 1.

The succeeding discussion examines the university-industry-government relationships in the Philippines and South Korea. I argue that these institutional linkages in the Philippines are frail and pale in comparison to those of South Korea. At the root of this problem is the dominance of an historic bloc wherein the economic forces (or the industry) has historically shown little interest in R&D and innovation because their interest is not in manufacturing, but rather in commerce and finance, as shown below. Except for a few firms, Filipino companies do not exhibit high levels of collective organization devoted to improving competitiveness through technology and innovation. As a result, their linkage with the university system has not been cultivated. And the third leg of the bloc is a non-modernizing centralized as well as fragmented bureaucracy which does not in reality recognize the central role of technological innovation as the driver of economic growth. As a result, the national development strategy in the Philippines does not demonstrate a high-level of political and bureaucratic support to provide an environment that encourages technological learning and innovation. The government's philosophy of laissez faire or non-intervention is bankrupt, considering the fact that there are many colonial institutional bottlenecks to be removed (see Chapter 6). This in effect explains 'the lack of political will' problem in the Philippines. This is in stark contrast to a modernizing nationalist historic bloc in South Korea that systematically built the nation's productive powers.

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[98] Elias Carayannis and Jennifer Jorge, 'Bridging government-university-industry technological learning disconnects: a comparative study of training and development policies and practices in the US, Japan, Germany, and France', *Technovation* 18 (6-7), 1998, pp. 383-407.

[99] See, for example, Nathan Rosenberg, 'America's entrepreneurial universities', in David Hart (ed.) *The Emergence of Entrepreneurship Policy: Governance, Start-Ups and Growth in the US Knowledge Economy*. Cambridge, UK: Cambridge University Press, 2003, pp. 113-140.

[100] Eric Hershberg, Kaoru Nabeshima and Shahid Yusuf, 'Opening the ivory tower to business: university-industry linkages and the development of knowledge-intensive clusters in Asian cities', *World Development* 35 (6), June 2007, pp. 931-940.

In the Philippines the perennial problem of fragmentation in the development and economic use of knowledge has been recognized by generations of leaders. Yet the problem persists. The lack of close relationships between universities, public research institutions, government, and industry was aptly described by Emil Q. Javier, a former Minister of Science and Technology:

> We have plenty of graduates of universities who are unemployed. The university or the educational system has proceeded to graduate so many people for whom there are no jobs in industry. We have a situation where people are overqualified and yet undertrained. Similarly, from the point of view of science, we have a lot of research results gathering dust in our bookshelves waiting to be utilized by industries. And all this time the industries keep complaining they do not have

> enough trained engineers, trained technicians and they have no appropriate technology produced by the research system.[101]

Until recently private-public cooperation in the science and technology sector was not evident in the Philippines.[102] Inevitably, this limited the interaction amongst government, academia, and industry, with very little direct infusion of public resources into industry for R&D purposes. Although members of academia acted, in an individual and personal capacity, as consultants to industry, formal institutional relationships did not develop. Scientists from the public sector determined what the priorities ought to be for research in academe and public research institutes. This in itself was already problematic when the goal was to utilize technology in the economy. While universities and public research institutes generated knowledge, they were not commercial users themselves. As such, they were not in the best position to determine industrial priorities. Herbert Fusfeld argues that "the ability of governments to conduct R&D themselves intended to stimulate economic growth is at best severely limited and at worst misdirected".[103] This statement is probably exaggerated, but it certainly highlights the consequences of societies being negligent of the crucial role of R&D inside firms. In 1989, a change in direction began. Under the leadership of former Minister of Science and Technology Ceferino Follosco, himself an engineer and industrialist, the thrust was to transfer the concrete results of R&D toward productive application and utilization.[104] The buzz phrase was 'technology transfer and commercialization', and since then publicly-funded projects have been deliberately oriented toward generating future commercial products. However, the change was not really sufficient. Institutional inertia simply allowed old habits to continue. Most R&D activities are still undertaken in the public domain, and public funds to private companies' research labs trickle rather than flow. Public technological financing in the industrial sector is a contentious issue especially when the results are appropriated by private enterprises because of the Philippines' laissez faire approach to development. Should governments finance (in one form or another) industrial research?

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[101] Emil Q. Javier, 'Linkages of Science, Education and Industry', in The Context of Science Education: A View of the Thinking of Filipino Leaders of the Public and Private Sectors About What Science Education Should Be Like for the Country, Proceedings of the Consultative Conference on Science Education Development Plan, 1983, p.83.

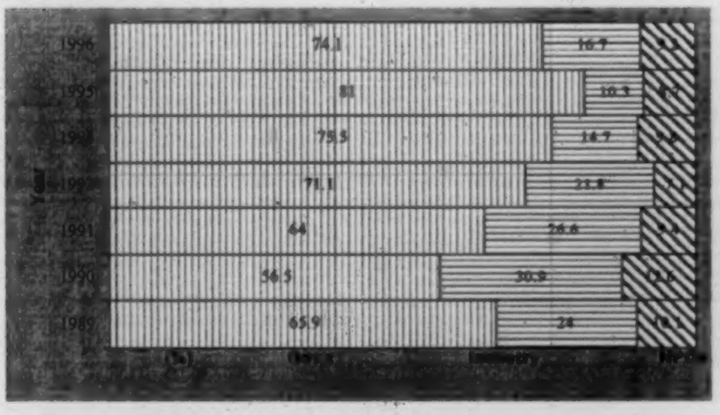
[102] Ibid., p. 86.

[103] Fusfeld, *Industry's Future*, p. 18.

[104] Ceferino Follosco, ''Science and Technology', in Jose V. Abueva and Emerlinda R. Roman (eds.) *Corazon C. Aquino: Early Assessments of Her Presidential Leadership and Administration and Her Place in History*, Quezon City: University of the Philippines Press, 1993, pp. 39-41.

When the experiences of South Korea are examined, what is clear is that public investment played a catalytic role, that is, it provided the initial stimulus for research activities within the business sector. But once industrial research had a life of its own, the business sector increasingly assumed responsibility for supporting R&D activity. In fact, industrial research became a powerful force because as new products were realized, it unleashed the capitalistic drive for profit and accelerated the processes of technological change and industrial growth in the South Korean economy. The public sector then focused its resources on funding university-based research, involving the training of graduate students. In the Philippines, it is the public sector that has been the biggest spender on national R&D (Figure 7-6). And government funding has been used to support public, rather than private industrial R&D activities. Between 1989 and 1996, there was no government funding to support research in industry (Table 7-5). The business sector footed the R&D bill with a little help from foreign sources. Not only are public resources devoted to national science and technology development scarce, the priority for spending is also a cause for concern.

Figure 7-6
Percent contribution of government and industry to R&D



Source: Compiled from the Department of Science and Technology

Table 7-5
Industrial R&D expenditures by source of funds, 1989-1996 (in million pesos)

Source of Funds/ Sector	*1989*	*1990*	*1991*	*1992*	*1994*	*1995*	*1996*
Total	**393.5**	**511.3**	**523.3**	**642.1**	**350.3**	**277.9**	**561.2**
Own Funds	**381.7**	**501.0**	**512.8**	**629.3**	**349.3**	**276.6**	**560.4**
Foreign Funds	**11.8**	**10.2**	**10.5**	**12.8**	**0.0**	**0.3**	**0.2**
Other Private Sources	**0.0**	**0.0**	**0.0**	**0.0**	**0.9**	**1.0**	**0.6**

Source: National Statistical Coordination Board

Historically, only a small proportion of the Philippines' public resources has been deployed to science and technology (Table 7-6). Since the 1950s only between 0.3 and 1.2 percent of national budgets have been allocated to national science and technology development[105] and, from this small amount, only a fifth was actually spent on R&D activities (Figure 7-7). This has been a long term general trend, provoking the comment from a former official of the DOST that "DOST has to think beyond the way it is presently allocating its resources". Officials in the country's science and technology sector pointed out in interviews that the "economic managers", that is, the Department of Finance, Office of the President, Budget and Management, Socio-Economic Planning, and the Office of the President wanted the science and technology sector to demonstrate the "economic benefits" of R&D before they would increase the sector allocation. I would argue that these "economic benefits" will not be forthcoming unless the present scarce funds are invested in industrial R&D and in activities to promote technological learning. This is shown in the experience of South Korea. Most importantly, however, the attitude of the country's economic managers towards the role of science and technology in industrial and economic development reveals a more fundamental problem in the Philippines quest for modernization.

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[105] The public science and technology sector includes all government research centers and institutes as well as university laboratories.

If we compare the present situation in the Philippines to South Korea before the 1980s, there is some cause for optimism. For several decades, the government sector in South Korea was the biggest supporter of national R&D. It was only in the 1980s that private R&D surpassed public R&D (Table 7-7). However, it was evident that the Korean government and its funding played a catalytic role in stimulating industrial research in the 1980s, and a rapid switch in position took place as the business sector rapidly expanded its support for R&D.[106] It is important to trace the historical origins of industrial research in South Korea to be able to see differences and similarities in the institutionalization of industrial research in different societies. In 1967, the Korean MOST (Ministry of Science and Technology) was created to act as a central agency for policymaking, planning, coordination and promotion of science and technology. The Philippines' DOST is similar to MOST, which was created just two decades earlier. Like DOST, MOST provided funds and guidance to many of Korea's public research institutes. In Korea, the Ministry of Trade and Industry is responsible for industry, similar to the situation of the Philippines' Department of Trade and Industry. A year before the creation of MOST, the first modern multi-disciplinary public research organization—KIST (Korean Institute of Science and Technology)—was established. Its main function was to undertake contract research with industry.

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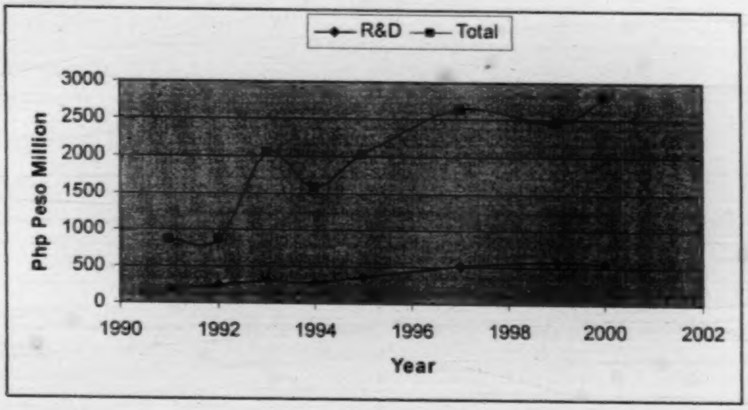
[106] Cheng-Fen Chen and Graham Sewell, 'Strategies for technology development in South Korea and Taiwan: the case of semiconductors', *Research Policy* 25 (5), 1996, p.760-761. .

Table 7-6
Proportion of public resources for science and technology, in million pesos.

Year	*Total for S & T Sector*	*Total National Government Expenditure*	*S&T(% of National Government Expenditure)*
1958	5.04	1,012	0.5
1959	5.26	1,196	0.4
1960	6.39	1,411	0.5
1961	7.38	1,469	0.5
1962	7.72	1,852	0.4
1963	8.18	2,067	0.4
1964	8.43	2,077	0.4
1965	8.21	2,228	0.4
1966	8.27	2,531	0.3
1967	8.44	2,944	0.3
1968	9.31	3,611	0.3
1969	45.53	4,053	1.1
1970	53.08	4,429	1.2
1971	57.32	5,588	1.0
1972	59.80	7,941	0.8
//	//	//	//
1977	173.08	23,759	0.7
1978	204.30	28,681	0.7
1979	180.25	32,226	0.6
1980	174.91	37,894	0.5
1981	217.42	50,820	0.4
1982	232.51	57,092	0.4
1983	393.79	61,838	0.6
1984	332.94	53,450	0.6
1985	358.86	58,329	0.6
1986	464.48	67,409	0.7
1987	704.03	79,321	0.9
1988	498.61	87,539	0.6
1989	1,037.83	117,012	0.9
1990	920.33	156,558	0.6
1991	853.77	166,158	0.5
1992	1,700.41	194,778	0.9
1993	2,452.53	309,437	0.8
1994	2,857.32	322,695	0.9
1995	2,225.31	387,398	0.6
1997	2,812.87	433,818	0.6
1998	3,262.55	546,744	0.6
1999	2,603.81	585,098	0.4
2000	2,787.63	665,094	0.4
2002	2,819.81	575,124	0.5

Source: Compiled from the General Appropriations Acts, Republic of the Philippines

Figure 7-7
Proportion of R&D expense in the total DOST funds



Source: Compiled from Department of Science and Technology

Table 7-7
R&D expenditures in South Korea, in US$ billion

	R&D Expenditure	Gov't-Funded R&D	Privately-Funded R&D*	R&D as proportion of GDP (%)
1972	30	66	32	0.29
1976	126	64	35	0.44
1980	321	50	48	0.58
1982	611	41	59	0.88
1984	1008	21	79	1.19
1986	1768	19	81	1.68
1988	3431	18	82	1.86
1989	3980	17	83	1.92

Note: * Excluding privately-funded R&D of foreign origin
Source: Chen and Sewell (1996, p.761)

In 1971, the KAIS (Korean Advanced Institute of Science) joined MOST and KIST. KAIS was a postgraduate research center where the research projects undertaken by graduate students were directly oriented to the practical concerns of industries targeted by government industrial policy, particularly ship-building, marine engineering, electronics, telecommunications, machinery and metals, and chemicals. I consider the establishment of KIST and KAIS together to be an institutional turning-point in the subsequent development of industrial research in South Korea. Even though they were both public institutes, KIST and KAIS provided the 'bridge' that crucially linked public research institutes and the university to industry. Such a linkage was important for the creation of what Freeman and Soete term an "R&D system", which is at the heart of the whole complex of the generation and economic use of knowledge.[107] The South Korean government through this particular initiative allowed local Korean entrepreneurs to see the economic benefits of R&D for their own businesses. In addition, the government also demonstrated to industry the crucial role of scientists and engineers in the emerging knowledge-driven global economy. As a result, in the 1980s, Korean industry developed its own R&D infrastructure, and the industry itself became a major employer of Korea's university graduates. Subsequently, KIST's role in contract research has diminished and the private sector has become the prime mover in industrial research activity. Other Korean government initiatives to promote R&D in the industry were institutionalized under the Technology Development Promotion Act of 1972. Industries were provided with various tax incentives and financial support through this law. Preferential funding became the most important mechanism for funding corporate R&D, through: (a) the technology development fund via the National Investment Fund, (b) the Industrial Development Fund, (c) the Korean Development Bank Technology Development Reserve Fund, (d) industrial technology promotion funds targeting automation and new materials development, and (e) the Small- and Medium-Industry Promotion Fund. The Technology Development Reserve Fund allows an enterprise to set aside up to 20 percent (or 30 percent for high-tech industries) of profits before tax in any one year to be used for its R&D work over the following four years. Complementing state support are venture capitalists who offer technical and financial support for venture businesses.[108] Although in South Korea's industrial development, university research was not tightly linked to industry, the remarkable levels of researchers and highly educated people, especially in science and engineering, enabled its universities to supply the manufacturing sector with a steady flow of qualified graduates (Table 7-8). The Philippines has lagged behind in this aspect of its human resource base.

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[107] Chris Freeman and Luc Soete, *The Economics of Industrial Innovation*, Third Edition. Cambridge, MA: MIT Press, 1997, p.5.

The Philippines and South Korea have some similar features in the sense that the few Filipino companies that have successfully joined the global production network are big firms, such as IMI (Integrated Microelectronics, Inc.), PSi Technologies, Fastech Synergy, and Ionics EMS. However, unlike the Korean firms, Filipino companies are contract or "merchant" manufacturers. A few have evolved from being assembly companies to complete end-to-end electronics design and manufacturing services providers, EMS/ODM or some kind of "one-stop shop". For example, IMI is the Philippines' leading EMS/ODM firm, provides wide-ranging services to more than a hundred of the world's largest OEMs (original equipment manufacturers), mostly Japanese HDD companies.[109]

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[108] Chen and Sewell, 'Strategies for technology', pp. 760-761.

[109] As defined in Chapter 3, an ODM (original design manufacturer) company provides design and manufacturing services for OEM or brand-name companies, whereas an OEM (original equipment manufacturer) manufactures products for brand-name firms. Neither type of firm develops its own brands. An EMS (electronic manufacturing service) is a supplier of services such as assembly, supply chain management and delivery.

Table 7-8
Selected data in human resources for R&D base

Indicator	Japan	South Korea	Philippines
No. of researchers per million population, 2002	5,070	3,003	48
Higher education achievement, 2002[a]	50	41	24
Science degrees, 1999[b]	66	45	31

Note:
[a] Percentage of the population aged 25-34 that has attained tertiary-type B and tertiary type-A and advance research programs. Tertiary-type A education covers more theoretical programs that give access to advanced research program and to professions with high general skill requirements. Tertiary-type B education covers more practical or occupationally specific programs that provide participants with a qualification of immediate relevance to the labor market.
[b] Includes natural science (physical, earth, atmospheric, biological and agricultural sciences, mathematics and computer science), social and behavioural sciences (psychology, sociology, and other social sciences) and engineering.

Sources: Compiled from World Development Indicators Database: IMD World Competitiveness

As an EMS (electronic manufacturing service), IMI provides supply chain management and manufacturing services to OEMs in storage devices, communications, industrial, consumer, and automotive electronics markets. As an ODM, it offers high-value solutions to its customers through design and development for such products as wireless local area networking (LAN) and wireless personal area networking. Another company designs embedded systems, having worked extensively with Linux software for varied applications including consumer, office, and industrial electronics products.[110] This company has also engaged in acquisitions and mergers as well as strategic partnerships, in order to build up its core technological competence, exploit the locally differentiated human and knowledge resources, diversify its customer base, and position itself in a multitude of existing or potential markets (Table 7-9).

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[110] IMI established its ODM subsidiary, EAZIX, in 1998 located in the Philippines to offer higher value solutions to OEMs.

Table 7-9
Technological strategies of Filipino global supplier firms

	Type of Firm	Location	Date of Establishment
IMI			
(a) Acquisitions			
Speedy-Tech Electronics	ODM	Singapore	2005
Saturn Electronics Engineering, Inc.	ODM	Tustin, California	2005
(b) Strategic Alliances			
BuS Elektronik GmbH & Co., KG	EMS	Germany	2006
Pulax Corporation	EMS	Japan	2006
PSi Technologies	EMS	Philippines	2006
PSi Technologies			
(a)Strategic Alliance			
Integrated Microelectronics, Inc.	EMS/ODM	Philippines	2006
(b)Non-inclusive licensing			
Texas Instruments (Phils)	Brand Firm	Philippines	-

Source: Compiled by the author

IMI was established in 1980 as a local company, and grew to become a Filipino multinational with investments in other Asian countries and the US. It has manufacturing facilities in the Philippines, China, and Singapore, design and engineering centers in Singapore, China, the Philippines, and the US. In 2005, IMI acquired Speedy-Tech Electronics, a Singapore-based EMS/ODM firm as well as a US-based EMS/ODM company, Saturn Electronics Engineering Inc. In recent months, IMI has forged strategic alliances with EMS providers in Germany (BuS Elektronik GmbH & Co., KG) and in Japan (Pulax Corporation). These acquisitions were aimed at strengthening IMI's design and engineering core competences in flexible circuitry, IC packaging, battery and power supply parts. With Speedy-Tech as part of its organization, IMI emerged as a regional EMS player, and was able to diversify in the IT industry, consumer electronics, industrial, banking and medical equipment. IMI USA manages the company's technology programs and new product introduction while also providing direct support for North American customers. Once a new product has been designed and manufactured in small quantities in IMI USA, it is transferred to Asia where it is produced in volume. As an EMS/ODM company, IMI has carved a niche for itself in the global supply industry based on good reputation and customer relationship. IMI provides its customers with excellent engineering support and dependable supply chain management, which allows those customers which are OEM or brand name firms, to focus on R&D and marketing.

Another Filipino firm that has succeeded as an EMS/ODM is PSi Technologies which was founded in 1988, and is mainly engaged in end-to-end electronic manufacturing services, from package design and prototyping to assembly, and testing services for power semiconductors used in telecommunications and networking systems, computers and computer peripherals, consumer electronics, office equipment, and automotive products. Power semiconductor assembly differs from standard IC assembly because it often requires special equipment such as solder alloy die-bonding machines and heavy-duty wire bonding machines, usually using aluminium wire. PSi also provides a full range of electronic manufacturing services, from materials procurement to delivery of final tested semiconductors to end-customers anywhere in the world. Working with key raw materials and equipment suppliers, the company ensures reliable production readiness at reasonable cost for its customers. Among its customers are Infineon Technologies, Texas Instruments, ON Semiconductor, Philips Semiconductors, Fairchild Semiconductor, and ST Microelectronics. Recently, PSi Technologies entered into an alliance agreement with IMI to leverage the two companies' engineering capabilities. Their combined resources, that is, IMI Speedy-Tech's expertise in original design of power supplies and PSI's capability in the assembly, packaging and test of power supplies, have been pooled with the intention of eventually moving into "smart power" in consumer electronic devices manufacturing.[111] Since advances in this technology come from the US and Japan, IMI believes that its facilities in Japan and the US are strategic in terms of access to the technology. Similarly, PSi has undertaken steps to access and accumulate knowledge through innovation activities. In close cooperation with Texas Instruments, PSi improved on the former's PowerFlex™ packages design to make the product more cost-effective and reliable. This arrangement with Texas Instrument was royalty-free and based on a non-exclusive license agreement.

Ultimately, the goal of this partnership between two Filipino-owned OEM/ODM firms is to "bring two Filipino global companies to make [us] a stronger brand —'Brand Philippines',…—where we can really provide a total turnkey from beginning to end here in the Philippines", Arthur Young, the CEO and Chairman of PSi, says.[112] Whether this can be done remains to be seen. One drawback of contract manufacturing is that the supplier firm is institutionally constrained to develop its own brand because of IPR issues. As Mr. Tan said, "they [its OEM customers] can use our available resources and capacity, and leverage our quality systems, while being sure that there will be no infringement of their intellectual property rights."[113] As the global ethos among contract manufacturers that "their business is manufacturing" is upheld, the pull for companies from developing countries to become "brand" firms is weakened and self-opposed.

Hyundai experienced the same type of constraint when it entered the semiconductor industry in a technology transfer agreement with Texas Instruments.

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[111] "Smart power" refers to power devices that are designed to conserve energy, e.g., a smart power strip monitors power consumption and can sense the difference between when computers and other devices are on or off. It can shut off the power, eliminating the idle current.

[112] Robin Norvell, '2 Filipino electronic cos. form alliance', 8 June 2005, Accessed on 25 July 2005, http://circuitsassembly.com/cms/cms/content/view/3482/95.

[113] Roy Sakelson and Steve Gold, 'The re-emergence of 'one-stop' shopping: the marriage of EMS and ODM Services', 24 March 2006, Accessed 23 August 2006, http://www.circuitree.com/CDA/Articles/Feature_Article/b563c1bc8fc2a010VgnVCM100000f932a8c0.

Although Hyundai had invested heavily in memory chips throughout the 1980s, its performance was affected by the restrictions imposed in the Texas Instruments Agreement because Hyundai was still a sub-contractor of Texas Instruments at that time. However, in 1992 Hyundai was able to proceed to manufacturing 16 Mb DRAM[114] independently of Texas Instruments because it had participated in ETRI's R&D activities. Interestingly, an institute and a laboratory similar to ETRIs were established in the Philippines in 2004 and 2006, respectively through the initiatives of the BGN (Brain Gain Network). The ARCDI (Advanced Research and Competency Development Institute) is a non-profit organization established through a collaboration among local industry, government and academe. Its objective is to create a 'critical mass' of 'retooled' Filipino engineers and scientists through training. Initially, the five areas of focus are ESD (electrostatic discharge), TRIZ (theory of inventive problem solving), introduction to wireless communication, test instrumentation and methodology, and DOE (design of experiments).

Similar to the Philippines' experience, the semiconductor industry in South Korea began as part of the expansion of offshore investment by US manufacturers. Through these foreign investments, local businessmen realized the entrepreneurial and profit potentials of semiconductor production. However, from the very beginning the South Korean government and business sector sought to foster local technological capabilities in the industry. The Koreans viewed as undesirable a strong reliance on foreign sources for manufacturing equipment, along with a trade imbalance where locally assembled components mainly went for export while domestic demand for end-user products was met by imports.[115] Although the industry began in the 1970s, its rapid expansion occurred only in the 1980s as the government and the Korean *chaebols* joined efforts to develop local capabilities. In 1974, the South Korean Semiconductor was established – a joint venture between the Samsung Electronics Group and a group of US-based South Korean expatriates. The latter passed sole ownership to the Samsung Group when a new firm, SSTC (Samsung Semiconductor and Telecommunication Company) was established. The joint venture was instrumental in providing local South Korean engineers design, fabrication and assembly capabilities which were not obtainable from offshore assembly plants. The 1980s saw a rapid expansion in the build-up of technological capabilities among large South Korean semiconductor firms.

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[114] DRAM is dynamic random-access memory, a memory device that periodically needs refreshing.

There were three factors that contributed to this developm~~ent. First,~~ there was the acceleration of technological alliances where three major local semiconductor firms entered into over 20 alliances, mostly with US companies since the Japanese were more cautious about pursuing technological alliances with potential competitors (Table 7-10). Second was the massive investment by Korean conglomerates through acquisition of foreign companies or technologies overseas, and investment in new manufacturing facilities. For example, Samsung obtained 64K DRAM production technology from Micron Technologies in the US for indigenous production and began to invest heavily in manufacturing facilities and product R&D. It also acquired Samsung Semiconductor in Santa Clara, California in 1983. In the same year, Hyundai acquired Hyundai Electronics America in Santa Clara, and a year later, Goldstar purchased United Microteck, Inc. of Sunnyvale, California. These acquisitions enabled the South Korean *chaebols* to have direct access to highly qualified scientists and engineers, advanced technologies and major markets.

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[115] Chen and Sewell, 'Strategies for technology', p. 759-783.

Third, in 1976 the South Korean government established the KIET (Korean Institute of Electronics Technology) to promote the semiconductor and computer industries. South Korea intended to be self-sufficient in semiconductor materials and equipment, targeting at least a 50 percent localization ratio as indicated in the government's fifth Five-Year plan in 1982.[116] KIET successfully designed and produced an 8-bit microprocessor and a 2K SRAM in 1981, 32K ROM in 1982, and 64K ROM in 1983.[117] KIET made visible the Korean government's hand in leapfrogging the country's local technological and innovation capabilities in microelectronics and IT industries. In 1985 KIET became ETRI (Electronics and Telecommunications Research Institute), and ten years later it became part of the Office of the Prime Minister. This major change was designed to make South Korea the world's leading country in information and communication technology (ICT). Through ETRI, a mechanism of cooperation between the government and the cooperating Korean *chaebols* was established, by jointly establishing a R&D fund (Table 7-11). Public money (average 79 percent) was funneled into the joint fund, and private sector funding made up the remaining 21 percent. In these research programs with the *chaebols*, prototypes were developed - of a 4Mb DRAM between 1982 and 1986, and a 16 and 64Mb DRAM between 1989 and 1993.

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[116] Ibid., p. 765

[117] ROM is read-only memory, a device geared to serial access that is able to store and retrieve data only in a pre-specified sequential order.

Table 7-10
Technological alliances between South Korean semiconductor manufacturers and foreign firms, 1983-1985

Year	Partners	Agreement	Products
(a) Samsung			
1983	Exel	TTA	16K EE PROM
1983	Samsung Semicon (US)	TTA	NMOS and CMOS memory
1983	DITTI (Germany)	TTA	Linear IC, CMOS
1983	Micron Tech (US)	TTA	64K DRAM, 256K DRAM
1983	Sharp (Japan)	TTA	16K SRAM, 256 ROM
1984	DITTI (Germany)	TTA	Bipolar IC
1984	Samsung Semicon (US)	TTA	16K EEPROM, 256K DRAM, 64K SRAM
1984	Intel (US)	T/C	MPU, MCU
1985	National Semiconductor	TTA	Gate array
(b) Goldstar			
1981	AT&T (US)	J/V,TTA	Bipolar process technology
1982	AT&T (US)	TTA	MOS technology
1983	Zilog (US)	TTA	8 bit microprocessor
1984	LSI Logic (US)	TTA	Gate-array
1984	AMD (US)	TTA	All AMD products in Korea
1984	AMD (US)	TTA	64K DRAm design
1985	LSI Logic (US)	TTA	Gate array
1985	Fairchild (US)	TTA	64K SRAM
(c) Hyundai			
1983	Modern Electro-System, Inc. (US)	TTA	NMOS, CMOS memory & MCU
1984	INMOS (UK)	TTA	256K DRAM
1984	TI (US)	TTA	64K DRAM
1984	International CMOS Tech (US)	T/C	EPROM, EEPROM
1985	Hyundai Electronics America, Inc.	TTA	64K SRAM, 64K EEPROM

Notes:
TTA- technology transfer agreement; J/V- JV; R/A- representative agreement; T/C technology cooperation agreement
Source: Chen and Sewell (1996, p. 764)

Table 7-11
Funding of Korean cooperative R&D projects in semiconductor technology, in million won, 1982-1986.

	1982	1983	1984	1985	1986
Number of R&D projects	14	20	31	33	45
Sources of Funding					
Government	3,844	3,822	5,742	5,589	6,389
Enterprises	877	983	589	1,855	2,848

Source: Chen and Sewell, (p. 765)

The research institute boasts more than 2,000 engineers highly experienced in R&D. This capability is proven by its registered international patent record of 1,280 granted and 3,561 current applications. The institute has earned more than 364 billion Korean won and has an impressive record of 1,386 technology transfers and 2,737 spin-off businesses. ETRI has successfully developed, in a very short period of time, modem synchronization technology for fourth-generation (4G) mobile telecommunications system, which allows data transmission rates of up to 100 MB per second and provides wireless device users with near ubiquitous connections.

While it is quite encouraging to note that a handful of Philippine electronic firms are moving up in the value-added chain, moving the country from poverty to equitable prosperity requires a critical mass of technologically-based SMEs. Technologically-capable firms, however, are created. This is a real challenge in the Philippines especially because the government's economic management philosophy is based on the notion of 'small government'. A development strategy that favours global finance rather than industry will douse any hope that a local supplier industry can be established. Korean nationalism is exactly the opposite.

7.4 Summary

This Chapter examined the South Korean historic bloc and its role in the development of the country's production sector. The dominance of nationalist political, economic, and intellectual forces in postcolonial South Korea was at the root of its successful development strategy. These ruling elites were capable of developing and implementing a broad-based national strategy based on the synergy of the agriculture and industry sectors through a functional national system of innovation. The government-industry-university linkages in South Korea were relatively strong in comparison to the frail and fragmented situation in the Philippines.

The Korean nationalist political and intellectual elites' vision of a wealthy Korea, where a majority of Koreans share the material prosperity, was central in making Korea 'Asia's next giant'. The government's 'visible hand' created an institutional environment that encouraged industrial forces to engage in technology and innovation activities through in-house R&D, to learn from imported technology, and to seek collaboration with other institutions. As a result, Korean companies exhibit high levels of collective organization devoted to improving competitiveness.

The developmental mindset of the Korean politico-ethical elites, however, was not a given. It was passed on to them by colonial Japan. As the Princeton University professor Atul Kohli puts it, "Japanese colonial influence on Korea, while ruthless and humiliating, was also decisive in shaping a political economy that later evolved into the high-growth South Korean path to development." In essence, Korea's postcolonial rapid development was a continuity of its colonial past.

Conclusions – Locating the national in the global

> In order that [the Filipino] may make progress it is necessary that a revolutionary spirit, so to speak, should boil in his veins since progress necessarily requires change; it implies the overthrow of the sanctified past by the present, the victory of new ideas over the old accepted ones...The lack of a national sentiment gives rise to another evil, which is the absence of all opposition to measures prejudicial to the people and the absence of any initiative in whatever may redound to their good. A man in the Philippines is only an individual; he is not a member of a nation.
>
> ***Jose Rizal (1889)***

> In the meantime, the struggle to pass from preindustrial to industrial, from "backward" to "advanced" goes on. By that I do not simply mean growth in income per head. That would be too easy. "Intensive growth", as it is sometimes called, can come about because nature has been kind, because new crops are more productive than old, because new land (including resources) becomes available, because relative prices change, because of outside developments and a free ride. But sustained growth is not possible without technological progress and gains in productivity. And that, history tells us, requires sooner or later the creation or assimilation of new kinds of knowledge and organization, which in turn depends on transformations within the society. External, enclave development will not do.
>
> ***David Landes (1990)***

The State, NSI and the 'political will' question in the Philippines

In 1986 ordinary Filipinos risked their lives and went to the street for what is popularly known now as the 'EDSA Revolution' to regain their freedom by toppling the oppressive and obscenely corrupt Marcos regime. At that point, they were full of hope that things were going to get better for them. More than two decades since the EDSA Revolution, nothing has changed. A dual economy persisted, one for the rich and the privileged and one for the poor. The country is trapped in a cycle of "debt slavery". How to break this cycle is a daunting task.

There is a wave of hopelessness that is enveloping the Philippines. Rather than exporting manufactured goods, the Philippines is an aggressive exporter of Filipino workers. The latest official poverty statistics as of 2006 indicates that 24 out of 100 Filipino families did not earn enough to satisfy their basic food and non-food requirements. This translates into about 4.2 million families which earn less than $5 a day. From the 1990s, a feminization of OFWs has increased. These women have university degrees, such as teachers, nurses, and doctors (turned nurses) leaving the country to become nurses, housemaids, entertainers, and caregivers in rich countries. But signs of a worrying social cost are already showing. This tragedy of scattered Filipino families separated from each other by thousands of miles because of a faltering economy that cannot provide sufficient jobs is a 'national disaster'. More than 6 million Filipinos work abroad and in 2006 they sent US$11billion in remittances to their families, and this helped prop up a national economy that is up to its neck in debt. A faltering economy and lack of economic opportunity are what fuels the exodus of many Filipinos. This has prompted one respected sociologist to conclude that this exodus signals a rebellion of the working class against the uncaring ruling élites in the Philippines.

This study was undertaken primarily to understand why the Philippines is a laggard when compared to East Asia's 'achievers'. Many scholars have suggested a 'lack of political will' to build the nation's technological capability as the cause. To explain how and why this problem came into being is the main goal of this study. Using the combined historical materialist and NSI approaches as an analytical framework, the politics of 'failed' rapid economic development in the Philippines have been examined. The framework attempted to synthesize the works of Chris Freeman and Bengt-Ake Lundvall with the political economy approaches advanced by Antonio Gramsci and Robert Cox (Chapter 1). The goal was to substantiate my own proposition that NSI is an historical structure, emphasizing the role of a malleable coalition of political, technological, and cultural forces or human agents in the economic transformation equation. Here NSI was deployed in an instrumental way, that is, as something that is not given, but is created by human effort.

Freeman distinguishes between 'narrow' and 'broad' definitions of NSI, with the former focusing on those institutions which deliberately promote the acquisition and dissemination of knowledge and are the main sources of innovation, and the latter recognizing that these 'narrow' institutions are embedded in a much wider socio-economic system in which political and cultural influences as well as economic policies help to determine the scale, direction and relative success of all innovative activities. The NSI historically has provided an environment hospitable to the shift from a trade- and finance-based economy to a manufacturing one. Freeman's broader concept of NSI corresponds with Gramsci's notion of a modern 'expanded state'. The modern state, according to the Italian political economic theorist, is one which constitutes the interacting political, intellectual, and material forces which he termed a national historic bloc. These interacting forces are crucial in a functional NSI as they create the broader social environment which nurtures innovativeness and entrepreneurship. The relationship of these forces is non-deterministic, meaning that the political (politicians and bureaucrats) and cultural elites (intellectual, religious leaders, and educators) exert influence (intentionally or unintentionally) on the economic elites just as much as they are also influenced. The enduring power of an historic bloc lies in their moral and intellectual leadership which generates consent among the people. The consensual assent of the people ruled is achieved through the promotion of 'common sense' ideas or unquestioned ideas embraced by the people. Given that this uneasy coalition of forces is historical, there is the likelihood of a particular coalition to emerge, flourish, and also to fall apart. Thus change is possible, and such an impulse could come from any of the component forces given that the relationship among them is non-deterministic, or that a rival historic bloc gains power.

Conceptualizing NSI as an historical structure suggests that global capitalist accumulation processes are always refracted through the prism of social relations and institutions prevailing within nation-states, hence the varied responses or abilities of nation-states to build technology- and innovation-driven production and service sectors. The implication of Gramsci's theory of the state for the 'lack of political will' problem is that crucial to our explanation about different attitudes and behaviour among states toward innovation systems is an understanding of the different types of state. This is significant considering the fact that it is only the state which has the legal and political power to coordinate institutions and make sure these are complementing one another. There are traditional as well as modern states. A modern state (as opposed to a traditional state) is essential to build an NSI because such a state is more inclined to use its political power to extract surplus from its people in the private economic domain rather than from the public political domain. By providing an institutional environment conducive for owners of private property to use their allocative power to better themselves, freedom to use innovativeness and creativity is increased. This fundamental synergistic institutional dynamic allows innovative processes to progress. The state embraces the notion that technology and innovation are endogenous to economic growth, but as social processes their utility in the economy depends on the interaction of other social forces. In this approach technology and innovation are regarded as central to economic change and development and that technology is a social process. NSI is a structured process, thus it is political.

The First hypothesis

My answer to the question(s) of lack of political will in the Philippines is that the long history of colonialism (and neo-colonialism) has entrenched a dominant global historic bloc in the country of which the more cosmopolitan Filipino ruling elite is a part. To test my main thesis, I proposed two hypotheses. *First, political will is demonstrated when the nationalist historic bloc (politicians, intellectuals, and capitalists) uses political power to initially establish a production- and service-oriented national economy.* This study attempted to test the first hypothesis through a comparative analysis done in what Erik Reinert considers the only laboratory available to social scientists – history. While most development scholars take the post-World War II period as the 'new beginning' for most of the countries in the developing world, Atul Kohli considers this as unfortunate because "it is likely that a significant component of the explanation for why the countries traverse different developmental paths lie in their colonial heritage." Kohli further states that "instead of asking, could the roots of varying performances be located in a variety of colonial pasts, most developmentalists now focus on the nature of post-World War II states, social structures, and policy choices as the primary explanations of divergent performances?" (see Chapter 6).

This study takes on the challenge posed by Kohli in an attempt to find a recurring pattern of structure or continuities as some sort of 'historical law'. The analysis of the specific case of the Philippines, compared with the experiences of England (Chapter 3), US and Japan (Chapter 4), Taiwan (Chapter 5) and South Korea (Chapter 7) have demonstrated that early in the development of these countries, nationalism embraced by the modernizing nationalist historic bloc played a role in the formation of an interlinked agrarian, manufacturing, and service economy. By contrast, the dominance of the cosmopolitan (global-local) historic bloc entrenched from 16th-century colonialism through the present 21st-postcolonial Philippine society has prevented this modernization process from taking place.

The first component of the global-local bloc, the economic forces (or industry in general), have historically shown little interest in manufacturing R&D and innovation because their interest is not in production, but rather in commerce and finance. Except for a few, Filipino companies do not exhibit high levels of collective organization devoted to building the production sector and in improving competitiveness through technology and innovation. Today, service industries are rapidly growing in the Philippines, but low-paid call center representatives are the present equivalent of electronic assembly workers when it was semiconductor assembly and packaging that was the 'rising industry' in the country. The country continues to be in the bottom end of the international division of labor. A production-oriented capitalist economy is different from the age-old trade-based economy where the economic activity is focused on the exploitation of price differentials between segmented markets, buying cheap products in one market to sell at a higher price in another, but which creates only opportunities for exchange. The focus on production was a new form of capitalism which marked the beginning of the pursuit of ever-increasing wealth through profit-oriented production where it becomes imperative for producers to produce for the market. This distinct type of capitalism is not necessarily equated with industrial capitalism because it actually first developed in English agriculture in the 17th century. This form of capitalism is characterized by 'social property relations' where for the first time both capital and labour became utterly dependent on the market for the most basic conditions of their own reproduction. For the first time wage workers sold their labour-power as a commodity in the market and also capitalists depended on the same market to buy labour-power, the means of production, and to sell for profit the goods and services produced by the workers. This unique system of market dependence in food production – agrarian capitalism – would set in motion a relentless compulsion to compete, to produce cost-effectively, to maximize profit, to re-invest surpluses, and systematically to increase labour-productivity through innovation and by improving the productive forces. Agrarian capitalism, which had completely transformed the most basic human relations and practices, had impacted a dynamic English economy in the 17th century and would eventually give rise to capitalism in its mature, industrial form in late 18th-century England. It was when nationalism was translated into 'scientism' (loosely defined) and innovativeness, and the widespread application of mechanical skills and considerable creativity in conception and design in machines that capitalism had matured. From the Spanish period, the Philippine economy has always been characterized by balance-of-payments crises, mass poverty, and low productivity. The only way this vicious cycle can be broken is by changing the productive structure. It is about "getting the economic activities right", as Reinert argues. The present IT-driven-economy facilitates the productivity of investment in a wide range of products and services, but this efficiency advantages achieved will be fleeting unless the production sectors are robust. Taking a backward economy directly into a modern service economy will not produce the desired end of rapid and more equitable economic growth in the sense that today's modern service sector depends on the demand from the manufacturing sector. Therefore, deep and diverse technology-based agriculture and manufacturing sectors remain significant in the so-called information age.

In the Philippines what links the present to the past is the dominance of cosmopolitan traders and financiers backed by imperial political rulers. The analysis shows that the first wave of globalization, primarily for raw materials and 'home-spun' goods, for the first time integrated the import-export business interest of global traders and financiers (European and locals) who were not necessarily politically in accord with the interest of the colonial Spanish government in 16th-century Philippines. This was continued and intensified during the American occupation wherein the merchants' and financiers' continued control of the economy effectively prevented the establishment of manufacturing. This enduring economic structure secured the interest of the local élites' export of agriculture products and the interest of European, American, Chinese and Japanese importers in making the Philippines a consumer market for their manufactured goods. The Philippine economy displayed more fundamental continuity rather than rupture within the almost four centuries of colonial domination. However, it is important to note that the most traditional and even vilified landed oligarchy and traders demonstrated that they were capable of adjusting to the state's policy choices. During the brief import-substitution period in postcolonial Philippines (1950s-1980s), foreign and local traders and their import-export business shifted into manufacturing, even though it was merely a 'packaging', 'mixing', and 'assembling' industry that was established during the IS period. It is necessary to emphasize that it was only during this period of protectionist policies that an industrial interest had finally emerged in the country. Protectionism, as history shows, had again proven to be a necessary tool to transform an economy from a trade-based into a manufacturing profile. What went wrong in the IS period was the failure to combine trade policy with technology and innovation policies to sustain the growth and introduce the dynamic process of technological change which is the backbone of a dynamic capitalist economy.

The Second Hypothesis

The second hypothesis posited was that *political will is shown when a modern government deploys a development strategy that combines trade with innovation policy to successfully transform a pre-capitalist (or pre-modern) to a capitalist (or modern) economy).* I have shown that the second component of the dominant Philippine historic bloc is a non-modernizing and centralized, as well as fragmented bureaucracy, which does not in reality recognize the central role of technological innovation as the driver of economic growth. As a result, except for the brief IS period, the national development strategy in the Philippines is mainly based on foreign trade and investment. There was no deliberate and coherent strategy to build the productive and innovative capacity of the country. History tells us that broad-based development is achieved when agriculture and industry sectors are brought together in a dynamic interaction. This linkage, however, is not natural; it has to be deliberately planned and strategized. The synergistic dynamism between agriculture and industry is largely generated by the double impact of the increased demand for farm products from an expanding nonfarm sector and the development of more efficient production methods resulting from the application of technology. The Philippines' attempt to industrialize through import-substitution between the 1950s and 1980s did not bring this result because the agriculture sector was left behind.

The Philippines is not a modern political economy. A modern political economy is one where there is an internal relationship between the public (political) or (state) and the private (economic) or (market). But at the same time there is also an institutional separation between the public and the private. The purpose for this institutional separation (not just relative) is that the power to extract surplus is now located in the economy and that same power is reconstituted in the political apparatus as rules. This political transformation was not undertaken in the Philippines by Spain or the US. When the election system was instituted during the Spanish and American (at all levels) periods, it created a polity and an economy that were not institutionally separated in real and unreal terms. Thus, elections at the municipal, district, provincial, and national levels decentralized power and these public offices which were now the local coercive and extractive apparatus were used by the local elected élites as their tool for economic extraction, thus corruption is widespread in the political system. In essence the election system did not really modernize the Philippine political economy. Unlike in the UK, US, Japan, Taiwan and South Korea, a modern bureaucracy was not developed, and thus a technology- and innovation-based production-oriented economy was not established. Instead, a predatory postcolonial state was inherited in 1946 wherein state office was viewed by the élites as the venue for surplus extraction. It is important to emphasize, however, that it was when a nationalist historic bloc finally ruled in the 1950s that an industrial development strategy was undertaken through import substitution. This gave rise to a few large Filipino corporations, and created an industrial bourgeoisie which was actually composed of landed and non-landed oligarchs and the Chinese merchants who diversified their businesses. The economy, however, is still dominated by foreign investors and agrarian oligarchies. What went wrong with the IS strategy in the Philippines was that it relied heavily on trade policies such as tariffs and currency exchange control. Trade policies were not combined with technology policy aimed to build up the technological capability of these firms. The result was a manufacturing industry that was in the real sense not manufacturing because it was (and is) engaged in packaging, mixing, and assembly activities. The failure to use technology and innovation during the IS period was a problem that is rooted in one more colonial structure – ideas – which continues to impede until today the rapid economic development of the Philippines. Ideas are the third component of the historic bloc.

Politics or power relations certainly determine who gets what and who benefits in any social relations, but what actors believe is strikingly related to their politics. I draw connections between nationalism (as a collective idea), and 'scientism' and developmentalism (intersubjective ideas) as they relate to the crucial role of the modern state. Broadly, there are two kinds of ideas: ‘collective images’ and ‘intersubjective meanings’. Collective images, such as nationalism or globalism, are differing views as to both the nature and legitimacy of a prevailing social order. As a collective image of identity, nationalism structures the social reality which economics, like any form of social inquiry, must address. Scientism and developmentalism, on the other hand, are intersubjective ideas – shared notions of the nature of social relations – and they shape the way rulers think about possibilities of rule (e.g. pure science or technology vs. technology as social process). Therefore nationalism as a concept has two dimensions: the collective identity or nationalist sentiment (attained at the spiritual or moral level) and the material side achieved through ‘scientism’ and developmentalism. It is therefore possible that there are nationalist projects which are devoid of nationalist sentiment.

Nationalist sentiment is fundamental to any project of modernization because it indicates a secular form of collective consciousness, a mental state that is orientated towards broad-based modern economic action which is a crucial factor in the emergence of modern economy. As a form of social consciousness, a way of cognitive and moral organization of reality”, nationalist sentiment becomes the drive to establish a modern economy, characterized by an intensive pursuit of highly productive economy – the “spirit of capitalism”. In essence, national identities and ideologies of nationalism preceded industrialization and the institutionalization of capitalism as well as the development of the state and secularization of culture. On this account, nationalism and ‘scientism’ (loosely defined) are viewed as political tools, the glue that unites social forces to work towards the common goal of broad-based development. Nationalist sentiment makes possible the conceptualization of a social order that makes social mobility legitimate, and consequently a focus on production (agriculture and manufacturing) which generates many jobs for the people, in effect, a national strategy of social development. Thus, the third component of the historic bloc and the most enduring one which impedes the transformation of a mercantile economy into industrial is development ideas.

The analysis shows that the liberal economic development thinking embraced by dominant Filipino intellectuals has become an obstacle to the Philippines' rapid development. Such political economic thought glorifies the role of markets and competitive forces in an economy, which is appropriate for an economy that has already built its system of innovation and production, but not in backward ones. An activist government is needed to remove the institutional obstacles before the market and competition could generate the dynamism needed in a capitalist economy. A philosophy of non-intervention is inapt in countries that have a heritage of colonial institutions. But these realities are not captured in formal mathematical models which have unrealistic assumptions. More importantly, these models take technology and innovation as an objective reality rather than a social process. In the Philippines, American-educated technocrats, especially the economists, with their commitment to neoclassical economics, did not seek to change the structure of the economy by establishing a robust technology-based production sector. Instead, a trade-based economy concentrated wealth only for a few. An agriculture-based industrial economy dominated by small and medium-scale firms would have provided off-farm employment and income, and therefore a broad-based economic development.

While Friedrich List's developmentalism is usually regarded as political economic thought opposed to Adam Smith's and David Ricardo's economic liberalism, the real issue facing developing countries is the timing and logical order in which these economic visions should influence development strategies. If meaningful development in backward economies or what Reinert calls "good globalization" is desired, the logical order should be developmentalism and economic liberalism. When the order is reversed as was and is the situation in the Philippines, underdevelopment and poverty persist. What connects the apparent inability of the dominant ruling elite is a global outlook without national roots. The ruling elite lack that nationalist sentiment – that shared interest as members of the same nation – which should have made them think and act for what is most beneficial for the whole country. This is the essence of List's economic nationalism. From the standpoint of what is morally right and just for the whole nation, private or individual interests should align with the shared interests as members of the same nation, and if the personal does not coincide with the greater good, List believes the latter should prevail.

The affinity of the global historic bloc (and by extension its local Filipino section) is with the rich and the privileged peoples of the world rather than with their own poor and dispossessed people. The long history of the free market economy dating back to the Spanish Philippines was and is responsible for the widespread inequality and poverty in the country. Unless a rival modernizing nationalist historic bloc, which is capable of using technology and innovation as tool for development is formed, broad-based development will remain elusive. That the industrialization strategy was biased against agriculture was a mistake because heavy industry requires massive R&D infrastructure and investments to succeed in this path of industrialization but the Philippines was in no fiscal position to do that. And the neglect of the agriculture sector that could have been linked to a developing industry sector did not create a vibrant domestic economy. The country is stuck in what Michael Alba calls a "low growth trajectory". The path towards high productivity among those few countries that made it was largely due to technology and innovation.

In general, these findings raise two important issues. First, they question the privileging of trade issues in mainstream international political economy because it marginalizes a serious development problem and constraint plaguing the South. That problem is persistent low productivity which has implications for a country's ability to compete in a globalized economy and generate national wealth. Second, and related to the first issue, they raise questions over the insistence of the IMF and World Bank on laissez faire and market liberalization in the South. In theory, Rokiah Alavi says, "free trade is undebatable, given the assumptions of perfect competition". However, he points out, "market failures are prevalent, significant uncertainties are involved in trading, varying learning costs are incurred over time, and many other factors may distort the economic welfare effects of free-trade policy as suggested in theory".[1] The experiences of the US, Germany, Japan, and South Korea, he argues, suggest "that government support in promoting infant industries did assist efficient industrialisation processes to some extent."[2] In Malaysia, for instance, he was able to show empirically that highly protected industries had a mixed performance, which implies that protection does not necessarily suppress the performance of industries as many claim.

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[1] Rokiah Alavi, *Industrialization in Malaysia*: Import Substitution and Infant Industry Performance. Florence, KY: Routledge, 1996, p. xiv.

[2] Ibid., p. xii.

Dani Rodrik, a Harvard University development economist, does not refute the importance of industrialization in development and also of the market-friendly approach. However, he argues that market does not bring about industrialization on its own, and that as market failure prevails, there is a need for government intervention. While Rodrik advocates for a need to 'get the policy process right' which can be done through a 'discovery process', [3] Reinert argues for a need to "get the economic activity right" which means for developing countries to focus on building their production sectors. This was what has been done by the newly industrializing East Asia. Ethan Kapstein also underscores the fact that what should be taken into consideration now are the restrictions imposed by international regulations. The 'rules-based' economic regimes that structure international economic relations, Kapstein asserts, are making it more difficult for states to pursue growth-promoting domestic policies, say, through the use of protectionist instruments or subsidies, because these are now illegitimate.[4]

Shafaeddin argues that there are two different categories of restrictions: These are 'institutional restrictions' imposed by international financial institutions, commercial banks, the WTO, bilateral donors, etc., and a more significant one is the 'ideological constraints'. The latter is more important in the sense that many politicians and bureaucrats, not only in developed but also in developing countries, have faith in the free market.[5] For developing economies, a well-balanced development strategy is needed. Michael Hart argues that "trade policy is a necessary but not a sufficient condition for growth and prosperity. To be effective, trade policy needs to be complemented by other government policies, ranging from fiscal and monetary policies to competition and industrial policies."[6] Wade declares that the evidence from the most successful industrial developers in recent history, i.e., of Japan, South Korea, and Taiwan is that these countries used protection policies well, as one of several instruments of industrial policies aimed to accelerate the diversification and upgrading of their economies faster than 'the free market' would have.[7]

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[3] Rodrik (2004, pp.29-30), cf. S.M. Shafaeddin, 'Towards an alternative perspective on trade and industrial policies', *Development and Change* 36 (6), 2005, p. 1146.)

[4] Ethan Kapstein, *Economic Justice in an Unfair World: Toward a Level Playing Field.* Princeton, NJ: Princeton University Press, 2006, p. 9.

[5] Shafaeddin, An alternative perspective', p. 1147.

The corruption discourse has distracted, if not prevented, us from getting at the core of economic problems in the Philippines. Corrupt politicians are to blame, certainly, as are greedy traders and financiers. It is the country's powerful economic managers' cosmopolitan outlook without nationalist roots that is responsible for the Philippines' remaining a country of salesmen and consumers rather than producers. That the country is exporting people rather than goods is a failure of those technocrats. It is they that develop and implement flawed development plans, and "disconnected" outcomes such as "bullish markets, empty pockets" should be taken as the result of faulty plans and strategies. Faulty plans are due to unrealistic and faulty worldviews. Of course, this ideological structure dates back to colonial days. Globalization and neo-liberalism are today's incarnation of structures which have been present in the Philippines since the Spanish period. Long before the era of globalization, the Philippines had already experienced what Robert Cox termed 'the fragmentation of the state'. Key government agencies managing the economy become the transmission belt of global processes, and development policies in the Philippines have reflected external and élite interests, not those of the majority of Filipinos. My field interviews indicate embryonic modernizing elements in the economy that could potentially be the locus for change in the historic bloc. The technocrats, particularly the powerful 'economic managers', however, remain an obstacle.

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[6] Michael Hart, *A Trading Nation*. Vancouver, BC: University of British Columbia Press, 2003, p. 6.
[7] Robert Wade, 'Questions of fairness: in search of a just international economic order', *Foreign Affairs* 85 (5), 2006, p. 141.

This study introduced the role of politics in economic development and the establishment of a national system of innovation and production, arguing that the broader concept of NSI is not itself natural, it is created. Thus, it is political. It is imperative to approach the establishment of NSI as a political problem. Critical to the establishment of this system is a modern political economy. The experiences of the 17th-century England, 18th-century US and Japan (especially the 19th –century Meiji reform), countries which had no colonial experience have shown that nationalist sentiment and developmental mindset go hand-in-hand to be able to deploy technology and innovation as a tool to develop the economy. These are the ingredients for a successful modern economic transformation. This was evident in colonial South Korea and Taiwan as the Japanese colonial government established state-society relations appropriate for catching-up in the world economy. Japan constructed in its colonies a political economy which also turned out to be well-suited at catching-up. Spain and the US did not modernize the Philippine polity and economy, thus the colonial policy of 'democratic tutelage' and 'benevolent assimilation' was simply rhetoric. Comparative colonialism tells us that not all colonial experiences are similar, but they all matter in the ability of the present Third World to develop.

Is there hope then for the Philippines? There is hope for Filipinos! The onus is now laid upon the shoulders of the Filipinos. The ISI experience showed a 'revolution from above' is possible in the Philippines, carried out by a nationalist historic bloc.

Nationalist politico-ethical élites were capable of shaping the economic forces by providing a policy environment that encouraged industrial development. At that point, however, the transformation was incomplete because the nationalist reformers failed to deploy technology and innovation as a potent instrument to catalyze the development of the manufacturing sector, a factor that I initially attribute to the colonial nature and quality of the science and technology education in the Philippines – a topic which deserves further investigation and analysis. For the Philippines to catch up to its neighbors, it will require the establishment of parallel non-government institutions (e.g. peoples' cooperatives) and the concerted efforts from various social forces, especially grassroots movements and the Filipino diaspora. The 19th-century Philippine revolution was made possible by raising the consciousness of Filipinos of the root cause (s) of the country's malady, and I believe that the future of the country lies in the same strategy. Popular discourse on agriculture-industry-service-driven development must be encouraged among the Filipinos both in the Philippines and those scattered all over the world.

My prognosis is that the best strategy to initiate development is at the local level. The Local Government Code which has strengthened some form of autonomy at the local level reinforces this strategy. On this account, my suggestion is to tap global and local Filipino resources and create 'trans-subnational historic blocs' to develop the Philippine agriculture sector. A NSI must be established to support the development of this sector. First, establish a credit facility, tapping overseas Filipino money. Second, create a core of Filipino academics and local development planners trained in science and technology policy. Third, establish close links between university, research institutes, local governments, and local businesses to ensure integration. And, finally, establish the technology- and innovation-based path of development as a political issue. These positive actions will return the national to its rightful place in the vastness of a global political economy.

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